S. HRG. 112–957

REVIEW OF THE NRC'S NEAR-TERM TASK FORCE RECOMMENDATIONS FOR ENHANCING REACTOR SAFETY IN THE 21ST CENTURY

JOINT HEARING

BEFORE THE

SUBCOMMITTEE ON CLEAR AIR AND NUCLEAR SAFETY

OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDRED TWELFTH CONGRESS

FIRST SESSION

AUGUST 2, 2011

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REVIEW OF THE NRC'S NEAR-TERM TASK FORCE RECOMMENDATIONS FOR ENHANCING REACTOR SAFETY IN THE 21ST CENTURY

TUESDAY, AUGUST 2, 2011

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN AIR
AND NUCLEAR SAFETY,
Washington, DC.

The committees met, pursuant to notice, at 10 a.m. in room 406, Dirksen Senate Office Building, Hon. Barbara Boxer (chairman of the full committee) presiding.

Present: Senators Boxer, Inhofe, Sessions, Carper, Lautenberg, Alexander, Sanders, Barrasso, Udall, Johanns and Boozman.

OPENING STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator BOXER. Good morning.

Senator Carper is the Chair of the Subcommittee. I am delighted that he is here, and, of course, we have a good turnout considering at noon we have a crucial vote. So we are going to move forward.

Today is the fourth time the Members of this Committee have gathered in this room to discuss nuclear safety following the disaster in Japan. Since our first briefing on March 16th, I have asked the NRC to heed the wake-up call and reevaluate our current safety and security measures that are at our nuclear power plants. I especially wanted them to look at our power plants that are located in areas that face the possibility of natural disasters such as earthquakes and flooding.

California's two nuclear power plants at Diablo and San Onofre are located in seismically active areas, and I want to repeat that any task force recommendations be implemented as soon as possible since millions of people live close to those plants, millions and millions of people.

The NRC has begun to act. First, NRC ordered inspections on the 104 operating nuclear reactors and issued reports on their readiness to address power losses and damage following extreme events. More recently, NRC issued the results of its near-term 90-day task force review. I understand that the six-person task force that conducted the review was made up of senior NRC staff with more than 135 years of combined expertise, but they did not rely on their experience alone.

The task force also had full access to all NRC staff and to all experts as they prepared their report. The task force found "continued operation and continued licensing activities do not pose an imminent risk to public health and safety." That means that the task force found that no plants needed to be immediately shut down, but problems were identified.

The task force has highlighted some issues that should be addressed right now as we speak, while further study and analysis is needed before other recommendations can be implemented. Last month, I sent a letter to Chairman Jaczko in which I urged the commission to act promptly on the near-term task force recommendations. Their near-term recommendations, they need to be implemented now in the near term.

I support the Chairman's road map for action within 90 days and I will ask the commission to move forward expeditiously. It took 90 days for the task force to make their recommendations. It should not longer than 90 days for the NRC to accept or reject them and move toward implementation. Any stalling will not be viewed favorably by the American people I can assure you. Their confidence in nuclear power is waning.

The task force concluded that the NRC "The NRC's safety approach is incomplete without a strong program for dealing the unexpected, including severe accidents. Continued reliance on industry initiatives for a fundamental level of defense in depth similarly would leave gaps in the NRC regulatory approach."

These findings are important. Although the task force stated that an accident like what happened in Japan is unlikely in the U.S., they did conclude changes should be made to our regulatory system to improve safety. They further concluded we cannot count on voluntary industry initiatives to provide the necessary level of safety.

The Japanese were not prepared for the disaster that hit them on March 11 th. That is the lesson learned from Fukushima. We can't afford to make the same mistake. We should make improvements that will enhance safety and preparedness for unforeseen disasters.

To that end, the NRC's 90-day review includes important recommendations. They should move quickly to implement the safety recommendations contained in the report or we are wasting taxpayer dollars and money. In addition, I believe more work should be done as part of the longer-term review to address moving spent fuel to dry cask storage and other issues that were not fully addressed.

Today, I call on the commission to announce a plan for adopting the task force recommendations, and I am not alone in my call for action. A July 23d New York Times editorial stated, "If nuclear power is to have a future in this Country, Americans have to have confidence that regulators and the industry are learning the lessons of Fukushima and taking all steps necessary to ensure safety. They went on to say, "This month, NRC's near-term task force issued thoughtful and common sense recommendations. The five commissioners should quickly adopt them."

A July 17th editorial in The Washington Post stated, "The NRC should use this review not merely to respond to a single event, but

to ensure that it is actively assessing low probability but high consequence risks.''

On July 19th, 15 nongovernmental organizations, including the Union of Concerned Scientists and the Natural Resources Defense Council, sent a letter to the NRC urging them to act to implement the recommendations. And more recently, on July 28th, my colleague, Senator Mark Kirk of Illinois was reported as saying, ''The bottom line is we cannot let the lessons learned from Fukushima become a forgotten story by dragging our feet on some of these critical short-and long-term improvements that can be made now.'' I couldn't agree with him more.

For both the safety and confidence of the American public, the NRC must act without delay. It is not acceptable now that we have the results of the task force review to merely call for more study and further delay. And I look forward to hearing each of you make a commitment that you are ready to move on their recommendations. You must act now that you know what some of the problems are. It is your moral and your legal responsibility, and I consider it mine as well.

I now call on Senator Inhofe.

OPENING STATEMENT OF HON. JAMES INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. Thank you, Madam Chairman.

First, I would like to put into the record the letter from Marvin Fertel, the President of the Nuclear Energy Institute, NEI. I will just read one sentence, the second paragraph. It says, ''The task force report lacks the rigorous analysis of issues that traditionally accompanies regulatory requirements proposed by the NRC.'' I would like to put it into the record.

Senator BOXER. Absolutely, in the record.

[The referenced document follows:]

NUCLEAR ENERGY INSTITUTE

Marvin S. Fertel
PRESIDENT AND
CHIEF EXECUTIVE OFFICER

July 15, 2011

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Mail Stop 016 C1
Rockville, MD 20852

Subject: NRC Near-Term Task Force Report

Project Number: 689

Dear Chairman Jaczko:

The nuclear energy industry is reviewing the NRC Near-Term Task Force's Recommendations for Enhancing Reactor Safety in the 21st Century and we look forward to providing comments to the staff on the recommendations. In general, the industry agrees with many of the issues identified by the task force. While there are some near-term actions that are clear from the available information, the basis for many of the recommendations clearly was disadvantaged by the fact that detailed information from the accident was, as the task force noted, "unavailable, unreliable and ambiguous."

The task force report lacks the rigorous analysis of issues that traditionally accompanies regulatory requirements proposed by the NRC. Better information from Japan and more robust analysis is necessary to ensure the effectiveness of actions taken by the NRC and avoid unintended consequences at America's nuclear energy facilities. The report also discusses at length proposals to modify the existing regulatory framework for nuclear energy facilities. If the commission decides to pursue some or all of the task force proposals related to the regulatory framework, these activities should be separated from the specific Fukushima Daiichi lessons learned recommendations.

The nuclear energy industry has taken seriously the accident at Fukushima Daiichi and continues to compile lessons learned that can be applied at U.S. reactors. As the NRC task force has concluded throughout the 90-day review, U.S. nuclear energy facilities are safe. Since the March accident, the industry has conducted detailed inspections at our facilities and taken steps necessary to enhance safety as well as responded to NRC-mandated actions at the facilities. As the NRC confirmed, every

1776 I Street, NW | Suite 400 | Washington, DC | 20006-3708 | P: 202.739.8125 | F: 202.293.3451 | msf@nei.org | www.nei.org

company operating a nuclear plant has verified its ability to safely manage the facility even in an extreme event, regardless of its cause.
We will continue to work with the NRC to identify potential enhancements in safety that should be made. In this regard, the continued assessment of information from Japan and the sharing of information compiled by the NRC, the industry and others that are assessing the accident will be critical to reaching the correct lessons learned for identifying the appropriate regulatory and industry action.

In that respect, it is incumbent upon the commission to move forward both expeditiously and responsibly in identifying the lessons learned from the accident. The competent, professional NRC staff should analyze the lessons learned and obtain broad stakeholder input in the most meaningful way. The industry is fully committed to participate in stakeholder forums on this report, beginning at the July 28 public meeting at the NRC.

NEI and our industry partners are coordinating the industry's Fukushima response activities and are developing recommendations for the industry in seven "building blocks"—integrated organizations created to develop and execute action plans in specified areas of focus. The industry has already taken measures to enhance safety and preparedness. Nonetheless, the industry will ensure that no gaps exist in our response activities and that there is no duplication of effort among the industry organizations and companies. We recognize that to maintain the highest standard of safety and security, we must continually evolve and improve the industry's standards of practice, and adapt to events and new information that affect our industry.

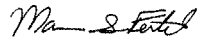
The industry is concerned that the task force's use of phrases such as "patchwork of regulatory requirements" undermines the comprehensive body of regulatory requirements imposed by the NRC, the agency's extensive inspection and oversight process, and the excellent safety performance at the industry's 104 reactors. As the task force report notes, operation of U.S. nuclear energy facilities does not pose a risk to public safety. In fact, the NRC has not identified any significant adverse trends in safety at U.S. reactors in its last 10 years of reporting.

The industry certainly agrees that the safety benefits of new requirements should be used to prioritize and integrate any new requirements with those currently being considered by the agency, such as work hours for plant workers, cyber security and fire protection. In doing so, the NRC should use its formal process for evaluating the resource implications of new or revised regulatory requirements both on the agency staff and nuclear energy facility staff. It might be useful if the NRC prioritized activities in an integrated schedule that includes all new requirements being developed or implemented over the next five years.

The task force report stated that all of its recommendations should be considered within the "adequate protection" standard. However, the basis for the recommendations contained in the task force report requires more expansive and detailed analyses to ensure that they actually address the lessons learned from the Fukushima accident. After the necessary and appropriate analyses are conducted by the NRC staff, the commission should expect the staff to justify the value of any new or revised requirements consistent with NRC standard practice. If any proposed new requirements are justified within the adequate protection standard, the commission should review these on a case-by-case basis.

The industry is fully committed to enhancing safety at America's nuclear energy facilities. NEI and its members look forward to participating in the rigorous and systematic process for public comment and review of the task force recommendations. There are differences between the Japanese and U.S. approaches both in operation of nuclear energy facilities and the regulatory oversight of these facilities. The agency should recognize these as well as still-emerging information from Japan as we move forward to address the lessons learned.

Sincerely,



Marvin S. Fertel

c: The Honorable Kristine L. Svinicki, Commissioner, U.S. Nuclear Regulatory Commission
The Honorable William D. Magwood, IV, Commissioner, U.S. Nuclear Regulatory Commission
The Honorable George Apostolakis, Commissioner, U.S. Nuclear Regulatory Commission
The Honorable William C. Ostendorff, Commissioner, U.S. Nuclear Regulatory Commission
Mr. R. William Borchardt, Executive Director for Operations, U.S. Nuclear Regulatory Commission

NUCLEAR ENERGY INSTITUTE

Marvin S. Fertel
PRESIDENT AND CHIEF EXECUTIVE OFFICER

August 1, 2011

The Honorable Barbara Boxer
Chairwoman
Committee on Environment & Public Works
United States Senate
410 Dirksen Senate Office Building
Washington, DC 20510

The Honorable James Inhofe
Ranking Member
Committee on Environment & Public Works
United States Senate
456 Dirksen Senate Office Building
Washington, DC 20510

Dear Chairwoman Boxer and Ranking Member Inhofe:

I understand that, in advance of tomorrow's hearing on the Nuclear Regulatory Commission's 90-Day Report, that some have alleged that operators of U.S. nuclear power plants oppose the recommendations in the report. That is absolutely untrue.

The U.S. nuclear power industry welcomes the 90-Day Report. Although we do not yet know with certainty all that happened at the Fukushima-Daiichi plants, we believe the report raises the right set of issues that need to be examined with regard to U.S. plants.

Further, as Commissioner Ostendorff has detailed and other Commissioners have also made clear in their votes on the 90-Day Report, we believe there are some actions that should be taken in the near-term. Industry immediately took some of those actions in the days after the events in Japan and is fully prepared to implement a number of others in the next 6 to 12 months.

All four Commissioners that have voted on the Task Force Report also indicated that they believe the report raises additional issues that will need to be addressed through rulemaking or other processes that will require more time. It is important that the Commission proceed with deliberate speed to issue a staff requirements memorandum to the Commission staff laying out the process to consider and disposition the task force recommendations.

1776 I Street, NW | Suite 400 | Washington, DC | 20006-3708 | P: 202.739.8125 | F: 202.785.1498 | msf@nei.org | www.nei.org

I encourage the Committee to use tomorrow's hearing to stress the importance of the Commission acting quickly to issue the staff requirements memorandum so that the Commission staff, industry, and other stakeholders can engage and proceed expeditiously.

Sincerely,

Marv Fertel

c: Members of the Committee
Members of the Commission
William Borchardt, Executive Director for Operations

Senator INHOFE. And I think on this report of the full commission, actually we have this as a joint Committee. It is the full Committee and the Nuclear Subcommittee, which I used to Chair a few years ago.

Chairman Jaczko relayed in our June hearing how as a part of the review, and I am going to quote him at this time, he said, "We always ask ourselves the question: Are the plants still safe? Is there anything we need to do today to address that? And the answer continues to be no, that we want to get good information. We have time to do that."

And I agree. It might be a while until we have an adequate assessment of the event, but we have time. And frankly, we need to take time to ensure that we learn the right lessons; that any regulatory changes have the maximum benefit to safety.

In that spirit, the task force describes how following the Three Mile Island event, the NRC took a number of actions which were not subjected to structured review and which were "subsequently not found to be of substantial safety benefit and removed."

I am pleased to see that a majority of the Commissioners are committed to ensuring that the task force recommendations proceed through a structured review process that incorporates the views of a wide range of agency staff, the NRC's Advisory Committee on Reactor Safeguards, industry and other stakeholders. Meanwhile, a full commission can take action at any time should new safety information warrant.

There are many facts that we still don't know about the accident, not just about the technical aspects, but also emergency preparedness and the impact of external influences on decisionmaking. It is important to remember that the Japanese regulatory system is very different from our own. I believe it is crucial for the NRC to understand those differences in order to assess whether proposed regulatory changes will accurately and adequately address the actual problems highlighted by the Fukushima accident.

Accordingly, I have sent a letter to each of you and look forward to receiving your responses. I was pleased to see Commissioner Svinicki endorse that concept. I was also disappointed to hear from the Chairman that he considers it too "difficult and time-consuming."

I don't believe that an accident in a country with different regulatory systems and practices means that ours are broken. I think the NRC must take time to learn not just the technical lesson from Fukushima, but also the regulatory and policy lessons, and I hope the NRC will focus on solving specific safety weaknesses highlighted by the Fukushima event, rather than allowing itself to become distracted by redesigning a regulatory framework that has served our Country very well.

The NRC's efficiency principle and good regulatory practice states, "regulatory action should be consistent with the degree of risk reduction they achieve." A structured process akin to the comments of Commissioners Magwood, Svinicki and Ostendorff goes a long way toward doing that.

Thank you, Madam Chairman.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR
FROM THE STATE OF OKLAHOMA

Thank you for holding this hearing today with the full Commission to review the Near-Term Task Force's report—this is a good first step toward understanding the implications of the Fukushima nuclear accident. The Commission directed the Task Force to identify near-term or immediate operational and regulatory issues, and their report concludes that the Fukushima scenario is unlikely to happen here and that continued nuclear power plant operation and licensing activities do not pose an imminent risk to the public.

Chairman Jaczko relayed in our June hearing how, as part of the review, "we've always asked ourselves the question: Are the plants still safe? Is there anything we need to do today to address that? And the answer continues to be no. That we want to get good information, we have time to do that." I agree. It may be a while until we have an adequate assessment of the event but we have the time, and frankly need to take the time, to ensure we learn the right lessons and that any regulatory changes have the maximum benefit to safety.

In that spirit, the Task Force describes how, following the Three Mile Island event, the NRC took a number of actions which were not subjected to a structured review, and which "were subsequently not found to be of substantial safety benefit and were removed." I am pleased to see that a majority of the commissioners are committed to ensuring that the Task Force's recommendations proceed through a structured review process that incorporates the views of a wide range of agency staff, the NRC's Advisory Committee on Reactor Safeguards, industry, and other stakeholders. Meanwhile, the full Commission can take actions at any time should new safety information warrant.

There are many facts that we still don't know about the accident, not just about the technical aspects but also emergency preparedness and the impact of external influences on decisionmaking. It is important to remember that the Japanese regulatory system is very different from our own. I believe it is crucial for the NRC to understand those differences in order to assess whether proposed regulatory changes will accurately and adequately address actual problems highlighted by the Fukushima accident. Accordingly, I have sent a letter to each of you and look forward to receiving your responses. I was pleased to see Commissioner Svinicki endorse that concept. I was also disappointed to hear from the Chairman that he considers it too "difficult and time-consuming".

I don't believe that an accident in a country with different regulatory systems and practices means that ours are broken. I think the NRC must take the time to learn, not just the technical lessons from Fukushima, but also the regulatory and policy lessons. I hope the NRC will focus on solving specific safety weaknesses highlighted by the Fukushima event rather than allowing itself to become distracted by redesigning a regulatory framework that has served this country well. As the NRC's Efficiency Principle of Good Regulation States: "Regulatory actions should be consistent with the degree of risk reduction they achieve." A structured process akin to the comments of Commissioners Magwood, Svinicki, and Ostendorff goes a long way toward ensuring that.

Senator BOXER. Thank you.

I am going to call on the Subcommittee Chair and then the Ranking Member, and then the rest of our colleagues.

Senator Carper, Subcommittee Chair.

OPENING STATEMENT OF HON. THOMAS CARPER, U.S. SENATOR FROM THE STATE OF DELAWARE

Senator CARPER. Thanks, Madam Chair.

Commissioners, welcome. Nice to see all of you today. This is a day that the economy could have melted down, and it looks we are going to be able to avoid that. And we want to make sure that the recommendations that these smart people at work at the Nuclear Regulatory Commission, that we can somehow seize the opportunity, seize the day and ensure that we don't have a meltdown in any our 104 nuclear power plants. But I am happy that you are here and look forward to this testimony.

These are challenging times for the NRC. They have been, frankly, challenging times for my colleagues and me as well. And we are

going to get through this day and hopefully we will get through to your recommendations and you will pick some that are the winners and the ones that we ought to implement sooner, rather than later, and we can get this show on the road.

As many of you know, my interest in nuclear energy comes from a clean air and energy security perspective. It also comes from a perspective of 23 years as a Naval Flight Officer chasing nuclear submarines. And a lot of my buddies in the Navy lived on nuclear power plants on submarines and aircraft carriers and ships. So I have a lot of interest from that perspective as well.

But nuclear power has helped this Nation curb our reliance on dirty fossil fuel. Nuclear power has also helped to reduce air pollution that damages our health and causes global warming. However, as we saw the crisis unfold at Fukushima facility, one wrong step at a nuclear power plant can have big and bad consequences. This crisis is a strong reminder that with nuclear energy, we never be complacent. Safety must always be our top priority.

Today, I look forward to hearing an update from our Commissioners regarding their reviews of our Nation's nuclear power fleet in light of the crisis at Fukushima. I especially look forward to hearing more about the recent task force recommendations and hope to learn today how the Commissioners expect to move forward on them.

I was relieved that the task force concluded that an accident like Fukushima is unlikely to happen in the United States and the nuclear fleet posed no imminent risk to public safety, which is due in part to the due diligence of the NRC to protect public safety.

But as our colleagues have heard me say once or twice, I believe it is not perfect and we need to make it better. And I believe the task force took this thing to heart that we can do better. And I believe we can all agree some of the task force recommendations are common sense and should be implemented soon, maybe sooner than others.

I would liken these recommendations to patching up a hole in a boat that is slowly leaking. There are easy no-brainers and it can be done with relative ease. Some of the recommendations are going to need more time, maybe much more time, and a fair amount of vetting. These recommendations are more like taking the boat apart and putting it back together. Definitely, more time is needed and more thought is needed on some of those and how we ought to go about doing them.

I sincerely hope the commission will take time to talk to stakeholders and get public reaction from all sides of this issue before moving forward with these recommendations. However, I will be disappointed if we are 6 months or a year from now down the road and have not seen any action from the NRC on any of these recommendations. That would not sit well with me and I would urge you to keep that in mind.

We need to all work together. I would like to say we are all in this together and we need to make sure that we incorporate the right lessons learned to keep our nuclear fleet safe into the future because, in the end, we are all in the same boat when it comes to nuclear safety.

Thank you, Madam Chair, and again welcome.

[The prepared statement of Senator Carper follows:]

STATEMENT OF HON. THOMAS CARPER, U.S. SENATOR
FROM THE STATE OF DELAWARE

"Let me begin by welcoming back the Nuclear Regulatory Commission's (NRC) Commissioners to our Committee. I know these are trying times for the NRC, and I appreciate you taking the time to be before us today.

"As many of you know, my interest in nuclear energy comes from a clean air and energy security perspective. Nuclear power has helped this nation curb our reliance on dirty fossil fuels. Nuclear power has also helped reduce our air pollution that damages our health and causes global warming.

"However, as we saw the crisis unfold at the Fukushima Daiichi facility, one wrong step at a nuclear power plant could have big consequences. This crisis is a strong reminder that with nuclear energy, we can never be complacent. Safety must always be our top priority.

"Today, I look forward hearing an update from the NRC Commissioners regarding their review of our nation's nuclear power fleet in light of the crisis at Fukushima. I especially look forward to hearing more about the recent Task Force recommendations. I hope to learn today how the Commissioners expect to move forward on those recommendations.

"I was relieved that the task force concluded that an accident like Fukushima is unlikely to happen in the United States and that our nuclear fleet poses no imminent risk to public safety. This is due in part to the due diligence of the NRC to public safety. But as my colleagues have heard me say over and over, I believe if it is not perfect, make it better. And I believe the task force took this saying to heart. We can do better.

"I believe we can all agree that some of the task force recommendations are common sense and should be implemented soon. I liken these recommendations to patching up a hole in a boat that is slowly leaking—these are no brainers and can be done easily. And some of the recommendations are going to need much more time and vetting. These recommendations are more like taking the boat apart and building it back together. We definitely need more time and more thought on this issue.

"I sincerely hope the Commission will take time to talk to stakeholders and get public reaction—from all sides of this issue—before moving forward with any of the recommendations. However, I will be very disappointed if we are 6 months or a year down the road and have not seen any action from the NRC on any of the recommendations.

"We all need to work together to make sure we incorporate the right lessons learned to keep our nuclear fleet safe into the future, because in the end, we are all in the same boat when it comes to nuclear safety."

Senator BOXER. Thank you.

It is my pleasure to introduce John Barrasso, the Ranking Member of the Subcommittee.

OPENING STATEMENT OF HON. JOHN BARRASSO, U.S. SENATOR FROM THE STATE OF WYOMING

Senator BARRASSO. Thank you very much, Madam Chairman. I appreciate that. I thank you. I thank Chairman Carper as well for holding the hearing today on the near-term task force report entitled Recommendations for Enhancing Reactor Safety in the 21st Century.

In reviewing the report, there are a couple of points that I believe need to be stated that come from the report itself. And first, our regulatory framework to protect our nuclear plants is working. It is working. As the task force concludes, although complex, the current regulatory approach has served the commission and the public well, and allows the task force to conclude that a sequence of events like those occurring in the Fukushima accident is unlikely to occur in the United States and could be mitigated, reducing the likelihood of core damage and radiological releases.

As Commissioner Ostendorff, who is before us today, stated on July 19th, "I do not believe that our existing regulatory framework is broken." I agree. I do not believe that our existing regulatory framework is broken.

Second, our regulatory system is quite different than Japan's. I agree with Commissioner Ostendorff's opinion with regard to the conclusions in the task force report that the Fukushima tragedy occurred in another country whose regulatory structure is quite different from that found in the United States and that "there is still a great deal that we do not know about Fukushima concerning the sequence of events, the failure of modes of equipment, functionality and execution procedures."

Because of the reasons that I have just mentioned, with so much uncertainty still remaining, I find the report to be light on suggested recommendations directly tied to the events at Fukushima. Instead, this report appears to be loaded with recommendations to overhaul our entire system of oversight and safety.

I agree with Commissioner Svinicki, who commented in her recent vote that the task force report recommendations are surprisingly specific and detailed for what was to be an initial 90-day review. In fact, the document is 82 pages long.

I am not surprised, however, if you put six career regulators in a room for 90 days, that you are going to get a lot of suggestions for more Washington red tape, recommendations that appear to be based on old agendas. This is what I believe we have here before us today. Some of these recommendations may be good and worth pursuing. Some may not be.

But as Commissioner Svinicki stated about the recommendations in the report, "Lacking the NRC technical and programmatic staff's evaluation, beyond that of the six NRC staff members who produced the task force report, I do not have a sufficient basis to accept or reject the recommendations of the near-term task force. There is no immediate threat that needs to be addressed, according to the task force, so we do have time."

There is no need to rush to regulate. Before we move forward with more red tape for America's nuclear industry, perhaps we need to look at these suggestions more closely. I am not advocating for a few NRC public meetings to simply check a box. I am talking about real NRC staff and stakeholder input through an open and transparent process where recommendations can be reviewed, prioritized and eventually either approved or rejected, which is essentially what Commissioner Magwood has said in his letter of July 29th to Congressman Markey.

This is the type of review that I believe four of the NRC Commissioners before us today are advocating.

So I thank you, Madam Chairman, and look forward to the testimony.

Senator BOXER. Thank you, Senator.

Senator Sanders.

OPENING STATEMENT OF HON. BERNARD SANDERS, U.S. SENATOR FROM THE STATE OF VERMONT

Senator SANDERS. Thank you very much, Madam Chair, for holding this important hearing, and thank you to the members of the NRC for being here.

The first and I think most important point that I want to make is the function of the NRC is not to represent the nuclear power industry. That is not your job. Whether we have more nuclear power plants or fewer is not your job. Your job foremost is to make sure that the nuclear power plants that we have in this Country are as safe as humanly possible.

My friend from Wyoming, Senator Barrasso, mentioned, he quoted the report and the report said it is unlikely that we are going to have a Fukushima disaster in this Country. Well, you know what? For the people of Vermont, and I think most people in this Country, unlikely is really not quite good enough. We want to make sure that everything humanly possible that can be done is done to make sure that nuclear power and the nuclear power plants in this Country are as safe as possible.

Madam Chair, to the Commissioners here today, it seems to me we should take note of the Associated Press, this very disturbing report that recently found that the NRC and the nuclear industry have worked "in tandem to weaken safety standards to keep aging reactors within the rules." In that regard, I have joined with the Chair of our Committee, Senator Boxer, to call for a GAO investigation of these allegations.

Americans are concerned about nuclear safety not just because of the AP investigations, but because of what happened in Japan. We have 23 reactors in this Country that are Mark I models, the same as the Fukushima plant. The President asked the NRC for a safety review after Japan and the NRC's task force of senior staff did a 90-day review and laid our recommendations to improve safety. They did what they were asked to do.

A New York Times editorial summarized, "The group's most important finding is that our Nation's oversight of nuclear power plants is a less than rigorous patchwork of mandatory and voluntary provisions." The task force recommendations include nobrainer measures to test earthquake and flood resiliency and to install hardened vents to reduce the risk of hydrogen explosion.

We are here today to find out what the NRC is going to do about these 12 common sense recommendations. Some people may think that this is "government red tape." Some of us believe that in fact we have got to do everything we can to make sure that the impossible does not happen and that a major nuclear accident occurs in the United States.

The answer, from what I am hearing up to this point, from a majority of the members of the NRC is that nothing is going to happen with regard to these recommendations. The Chairman has asked the NRC to begin to move forward on all 12 recommendations within 3 months in order to fully implement new post-Fukushima regulations by 2016, and I applaud him for doing that. This does not sound very ambitious to me, yet the media reports that this timeframe is apparently too ambitious for three of our Commissioners, and I hope they dispel what I read in the media,

and that is Commissioners Svinicki, Magwood and Ostendorff apparently, as I understand it, they want more study and review and delay.

And I happen to know, have been here long enough to know what happens in this town when we "delay," when we want to postpone a study. It means that the issue is going to be swept under the rug, that nothing is going to happen. And to me, that is unacceptable.

We need a commission focused on safety and acting on the task force recommendations in a swift and transparent manner. I believe we should all demand that the NRC commissioners today commit to start action on the safety recommendations within 3 months. Delay is not an acceptable option, and I look forward to hearing from the Commissioners.

Thank you, Madam Chair.

Senator BOXER. Thank you, Senator.

Senator Alexander.

OPENING STATEMENT OF HON. LAMAR ALEXANDER, U.S. SENATOR FROM THE STATE OF TENNESSEE

Senator ALEXANDER. Thank you, Madam Chairman, and thank you for this hearing.

Thanks to the Commissioners for their service.

I think it is always useful since safety is our concern to begin with the safety records: no deaths at any commercial nuclear reactor; no deaths on any Navy reactor; and no one was even hurt at our most celebrated nuclear accident, Three Mile Island. That is an enviable record which we should always try to improve.

And I would like to approach it a little differently today. I would like to ask this question: What if we didn't have nuclear power? What if we didn't have it at all in the United States? It is 20 percent of all of our electricity; 70 percent of all our clean electricity. We use about a quarter of all the electricity in the world to power this County. What if we didn't have nuclear power?

Well, we can look at Japan, which is the third-largest economy, and get an idea of that. There were a couple of articles last week, one in The Wall Street Journal, one in Bloomberg, which gave us a picture of it. The Wall Street Journal article did say the Japanese are very patient people, so they have turned their air conditioners up to 82 degrees. The reason all this is true is because since the earthquake, most of their reactors are out. They have closed them down for maintenance and to check them.

And so they have lost about 20 percent of all their electricity in Japan, about the same amount that nuclear power provides to us. So their air conditioners are at 82 degrees. The car-makers are operating on weekends to avoid sucking up electricity during the week. The Emperor and the Empress are wandering around the Imperial Palace at night with flashlights and candles. Emergency responders have brought 22,000 people to the hospitals with heat stroke. It is about the same weather over there as here.

They are expecting electric bills to go up because as they use more renewable power, that is higher cost. Bloomberg was even more graphic. It quotes the Chairman of Sharp, a company that has a plant in Tennessee making solar panels, that the issue of the

power supply could be the end of manufacturing in Japan, an exodus of Japanese manufacturers, he sees. "If we don't keep these reactors operating," he said, "Japan's economy will wither. Our young people will move abroad leaving the country with only grandpas and grandmas."

The Japanese Chamber of Commerce, estimates that Japan's gross domestic product will fall by 3.6 percent, lose 200,000 jobs if all of the reactors close by next spring as scheduled maintenance takes them offline.

So there is a little snapshot of what would happen if you lose 20 percent of your electricity, which is what nuclear power provides us. Why do I raise that? Because, as was said, we have an aging nuclear fleet. We haven't built a new reactor in 30 years; 25 or 30 years from now, this commission will have to decide whether to extend the life of a lot of the older reactors. I have advocated building 100 new nuclear reactors over the next 20 years, and even if we did that, we would still barely replace the reactors that we have and the need for electricity in this Country because the EIA, the Energy Information Administration, estimates that the increase in the need for electricity will be up by 31 percent.

So we are going to need a lot of clean, reliable electricity in this Country. And we can't afford, if we want to have a high standard of living and good jobs, to lose 20 percent or 10 percent of our electricity. And if we don't have nuclear power, we will have to rely on coal that is dirtier; on gas that is dirtier; and who knows what the price of gas will be. And the idea of relying on windmills to power the United States of America is the energy equivalent of going to war in sailboats.

So we are going to need lots of nuclear power. And as long as we are having eloquent testimony about delays here, which I just heard, I would like to recommend we have no delay in one of the other recommendations of the Committee, which is to complete without delay the design for the AP 1000 and the economically simplified boiling water reactor design.

In other words, complete without delay this commission's approval of those two designs so that we can move ahead building a sufficient number of nuclear reactors to give us the kind of clean, reliable electricity that will permit us to have the low-cost energy to have good jobs in the United States and not experience the kind of exodus of manufacturing overseas that the Japanese are afraid might happen to them if they are not able to bring their reactors back online.

Thank you, Madam Chairman.

Senator BOXER. Thank you very much.

Senator Udall.

OPENING STATEMENT OF HON. TOM UDALL, U.S. SENATOR FROM THE STATE OF NEW MEXICO

Senator UDALL. Thank you, Madam Chair, and thank you for calling this hearing.

I think many others have said it already that I think safety is the key here and I am going to want to hear from each of you as to how you believe we should move forward on the safety issue. I think it is unacceptable if we have the kind of thing happen in the

United States that happened in Japan, and I hope that you are on a wavelength, that you are going to move in the direction of taking seriously what this task force said.

I mean, my understanding is that this is a task force with a 139 years of experience in this area. They are substantial. They are people that really know what they are talking about. We talk about recommendations that fall into five categories. These categories seem very common sense to me, clarifying the regulatory framework. You have to take a hard look every now and then at regulatory frameworks and how they work.

Ensuring protection, the task force recommends under that category as part of a longer-term review, the NRC evaluate potential enhancements to the capability to prevent or mitigate seismically induced fires and floods. We have seen in New Mexico those kinds of fires and floods. I know they are seeing them across the Midwest. We need you to take a hard look at that.

The third category, enhancing mitigation, the task force recommends the NRC strengthen station blackout mitigation capability at all operating and new reactors for design basis and beyond design basis external events. I hope that we will have time to discuss that with you. I intend to ask a question about that.

Strengthening emergency preparedness, the fourth category, seems very common sense to me and something we could move forward with on this front. And the fifth, improving the efficiency of NRC programs, I mean, we always want to be doing things like that.

So I am not going to use all my time. I want to get to the questions, Madam Chair, and I yield back at this point.

Senator BOXER. Next is Senator Johanns.

Thank you so much for being here.

OPENING STATEMENT OF HON. MIKE JOHANNS, U.S. SENATOR FROM THE STATE OF NEBRASKA

Senator JOHANNS. Thank you, Madam Chair.

To the Commissioners, let me just start out and tell you we appreciate your being here with us today. So many things were said by Senator Alexander that I concur with that it would almost be sufficient to say that I adopt his statement, but let me offer a thought or two, if I might.

I am very anxious to hear about the safety concerns. We have nuclear power, as you know, in the State of Nebraska. It has been a good neighbor in our State. We feel it runs sufficiently smartly. We feel that the folks who are operating the facilities in our State are responsive to the community. I would be remiss if I didn't mention the quality jobs that go with the facilities. All of that has worked very well for us.

The second thing I would say about that is, as you know, for many months now we have been in the throes of a historic flooding event with the Missouri River in Nebraska, and that has implicated our nuclear facilities. We have found you folks to be responsive, the staff to be responsive, and it has been an experience that although difficult and trying, because so much land has been under water for so long, we feel in terms of the nuclear facility that people have responded and not overreacted, but worked with us.

Therefore, I am very anxious to hear about the safety recommendations. I don't think there is any doubt, wherever you sit on this dais, we want to make sure that our facilities are safe.

But I would also offer a thought that there is a reason why we are not building nuclear power plants these days in any kind of numbers. When I talk to folks in this industry, they say it is complicated. It is very difficult to get through the process. It is enormously expensive and there is no guarantee that you are going to get anything at the other end for that massive, massive investment.

There seems to me a better way of doing this. Now, this is not an area of expertise for me. I have no nuclear background whatsoever in my life. But having said that, what I am anxious to hear about today is the economic of what you are recommending just because I want a full picture. Sometimes you have to make hard decisions, do the things that you need to do from a safety standpoint, even though you know that the cost is there, but there is just no other choice.

But for me, I always like to weigh the decisions made against the cost that is incurred and try to get an understanding of whether we have benefited the situation in any significant way for the investment. This industry, I worry, is literally at a point where it could shut down over time if we can't somehow free up the ability to approve plants and approve construction and deal with the safety issues in a cost-marked sort of way.

So those are the kinds of things I am interested in. But I don't say those things to criticize you. Like I said, our experience in working with the Nuclear Regulatory Commission has been a good experience. People have worked with us and the staff has worked with us. I am just interested in how do we do this in a way that is safe, but economically viable.

Thank you, Madam Chair.

Senator BOXER. Thank you, Senator.

Senator Lautenberg.

OPENING STATEMENT OF HON. FRANK LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator LAUTENBERG. Thank you very much, Madam Chairman.

And thank you, members of the NRC. I think you do a very good job, I will start off with that, and then I will get more critical, but we do thank you.

Since Japan's nuclear crisis began unfolding 5 months ago, Americans have wondered, could it happen here? The NRC's task force studied the situation closely and determined our nuclear facilities pose no imminent threat to the American people.

While this is reassuring news, our work is just beginning. The NRC task force issued 12 recommendations to strengthen nuclear safety and ensure reactors remain safe, including long-term steps to improve emergency preparedness and protect facilities when earthquakes or other natural disasters occur.

Now, it is critically important for the Nuclear Regulatory Commission to act on these recommendations quickly. The five Commissioners will hear today are from among our Country's most impor-

tant guardians, and we are relying on you to keep our Country's nuclear facilities safe and secure.

Prompt action on the recommendations to the NRC is particularly important to the people of my State of New Jersey, where four nuclear power reactors provide our State with half of its electricity. Just last month, the NRC renewed the license to operate the reactor at Hope Creek which shares the same design as the damaged reactors in Japan.

Now, in its renewal, the NRC included conditions intended to make Hope Creek safer and we have to continue to take every precaution to make sure this facility and others like it are as safe as we can make them. The fact is, nuclear power plays a great role, a critical role in our Country and it is an emissions-free energy source that provides one-fifth of our Nation's electricity.

So nuclear power can continue to be a part of our energy future, but the disaster in Japan has taught us nothing can be taken for granted where nuclear power is concerned. Japan is a world leader in technology and its leaders believed that Fukushima, the plant, was very strong, strong enough to withstand a worst-case scenario. But as we now know, it wasn't.

Likewise, the Chernobyl tragedy 25 years ago taught us that the effects of a single nuclear accident can linger for generations and we have to pay attention to these questions and learn from others' mistakes. This means continually revisiting the laws intended to keep nuclear plants safe, strengthening the NRC's regulations, and ensuring plants are in compliance at all times.

The NRC has got to ask the hard questions and make sure the American people get the answers that they deserve, and I urge you Commissioners to act quickly, to take the next steps to make sure that nuclear facilities are prepared and that the public is fully protected.

Thank you.

Senator BOXER. Thank you.

Senator Boozman.

OPENING STATEMENT OF HON. JOHN BOOZMAN, U.S. SENATOR FROM THE STATE OF ARKANSAS

Senator BOOZMAN. Thank you, Madam Chair and Ranking Member Inhofe for having this really important hearing on the task force review.

The task force has produced a report that is a good first step to help make sure our nuclear industry continues to be the safest in the world. Nuclear energy provides an affordable, reliable, emissions-free supply of energy to power our economy and create jobs, especially industrial and manufacturing jobs that are power-intensive.

We need to learn and implement both short-term and long-term lessons from the event in Japan. Safety must remain our highest priority, and I think that all of us agree with that. American nuclear energy is produced with oversight from a strong, independent regulatory agency within a robust culture of safety. Our industry is truly the gold standard and we need to keep it that way.

The task force review confirmed that appropriate mitigation measures have already been put in place and that continued oper-

ation and licensing activities do not pose an imminent risk to public health and safety. I would very much like to encourage the commission that as they move forward that they do so with speed, but more importantly, or as importantly that they do this very, very thoughtfully. We need a process that allows the commission, the NRC staff, the industry and other stakeholders to be fully engaged.

With that, I yield back. Thank you, Madam Chair.

Senator BOXER. Thank you so much.

Now, Senator Sessions, you are our last, but certainly not least.

OPENING STATEMENT OF HON. JEFF SESSIONS, U.S. SENATOR FROM THE STATE OF ALABAMA

Senator SESSIONS. Thank you.

We spend a good deal of time on this Committee and other Committees in rightly considering the events at Fukushima. The report of the near-term task force provides a good starting point to thinking about potential improvements that can be made on our nuclear fleet.

But I do think it is important to keep in mind, as Senator Alexander noted, that we have not had one single event at an American nuclear power generating plant where an individual has lost their life or sustained a serious injury as a result of nuclear effects.

So I think that is a significant thing that we need to remember since over 20 percent of our electricity is coming from nuclear power. It is a big part of our economy and it has been very safe. I really think we need to remember that. How many lives have been lost in the process of creating coal plants and providing the fuel? And how many problems have we had with natural gas and difficulties and lives have been lost? And most provide CO2 and other pollutants into the atmosphere.

I am interested, as Senator Inhofe is, in looking at the Japanese system to see if theirs was less effective than ours. NEI, Nuclear Energy Institute, says that we have the gold standard for nuclear regulation and I hope that is true, and we would like it to be true. And we need to know if perhaps our regulations would have prevented this.

Certainly, nuclear plants already must demonstrate to the satisfaction of you, the NRC, that the plants can continue to operate safely even during a blackout scenario. And I do believe, as Senator Alexander noted, the AP 1000, for example, would have gravity-fed fuel or water processes that would shut down a plant even if there was complete loss of power and the backup failed.

So those would be even safer plants, it seems to me, and those ought not to be unnecessarily delayed. Delays are costs. And you delay and create uncertainty, and pretty soon people are afraid to invest what would need to be invested for us to create a cleaner, more productive form of energy that is safer, in bottom line, than other forms of energy for the United States.

My goal has always been that we should have cleaner energy. We want American energy, not imported, wherever possible. We want safe energy. We want cost-efficient energy, energy that does not place an unnecessary burden on our people and our economy.

Nuclear power fits all of those, it seems to me. It may not be the total solution, but it fits all of those policies and I hope and pray

and urge that you do your job to make sure we are safe, make sure it is operating safely, but do not be a burden on our ability to meet the need for increased electricity in the future by blocking a reasonable development of new sources of nuclear power.

I notice in Alabama we had a shutdown of power. We had power failures to our nuclear plant at Brown's Ferry, the TVA plant. The backup systems responded just as expected, just as required, just as you have monitored and required, and there was no dangerous scenario that occurred.

I also appreciate the fact that your committee has found that there is no reason to doubt the safety of our nuclear power facilities. Your task force report concludes that a sequence of events like the Fukushima accident is unlikely to occur in the United States. Continued operation and continued licensing activities do not pose an imminent risk to public health and safety.

So Madam Chairman, thank you for having the hearing. I think it is something that we need to move forward with. Hopefully, we can be able to effectively allow a new generation of even more efficient, more safe nuclear power plants to come online, plants that produce tremendous amounts of baseload electricity without pollution of our atmosphere and that provide safety to all concerned.

Senator BOXER. Thank you so much, Senator.

So under the agreement that we have reached, the Chairman will have 5 minutes and each of his colleagues will have three. Is that your understanding? OK, excellent.

Chairman, go right ahead.

I am going to ask everyone to stick with their time because we are so close to a vote and we want to conclude before then.

So go right ahead.

STATEMENT OF HON. GREGORY B. JACZKO, CHAIRMAN, NUCLEAR REGULATORY COMMISSION

Mr. JACZKO. Chairman Boxer, Ranking Member Inhofe, Chairman Carper, and Ranking Member Barrasso and members of the Committee, on behalf of the commission I appreciate the opportunity to appear before you to discuss the NRC's near-term task force recommendations and their potential implementation.

In the aftermath of the Fukushima accident, the commission established the task force to spearhead our systematic and methodical review of the NRC's Nuclear Reactor Safety Program. Its members include some of the agency's most experienced and expert staff, collectively having more than 135 years of regulatory experience.

In conducting their review, the task force's efforts were independent, but by no means isolated or solitary. In developing their report and recommendations, the task force had access to the entire NRC staff with more than 100 hours of briefings.

They also spent thousands of hours reviewing agency products and information and consulted with the NRC site team in Japan. In its report, the task force outlined a comprehensive set of 12 recommendations, many with short-and long-term elements that touch on a broad range of important issues, including the loss of electrical power, earthquakes, flooding, spent fuel pools, venting and emergency preparedness.

I provided a detailed overview of the recommendations in the written testimony I submitted on behalf of the commission. As their report makes clear, the task force has done an outstanding job of helping us better understand what nuclear safety requires in a post-Fukushima Dai-ichi world.

Now that the task force has completed its review, it is up to the commission to decide how to move forward. A wide range of stakeholders have called upon the commission to act promptly. At this point, the commission has not yet reached a decision on how to proceed.

And although my colleagues may hold differing viewpoints, I believe our goal remains for the commission to come to an agreement on an open and transparent way for us to make a merit-based decision on the 12 recommendations in a finite period of time.

In considering the task force recommendations, the commission must move forward with the urgency called for by these real safety issues. Although the task force did not find imminent risk to public health and safety, they identified significant concerns with specific issues and they recommended improving the agency's regulatory framework.

Fukushima clearly demonstrated that extraordinary circumstances can challenge plants in unexpected ways and we must commit to a strong and timely response. I believe that the American people expect no less.

So to all the Members of the Committee, I thank you for the opportunity to appear before you and I would be happy to answer any questions you may have.

Thank you.

[The prepared statement of Mr. Jaczko follows:]

WRITTEN STATEMENT

BY GREGORY B. JACZKO, CHAIRMAN

UNITED STATES NUCLEAR REGULATORY COMMISSION

TO THE

ENVIRONMENT AND PUBLIC WORKS COMMITTEE

AND THE

CLEAN AIR AND NUCLEAR SAFETY SUBCOMMITTEE

UNITED STATES SENATE

August 2, 2011

Chairman Boxer, Ranking Member Inhofe, Chairman Carper, Ranking Member Barrasso, and Members of the Committee, we appreciate the opportunity to appear before you to provide a summary of the findings of the NRC's Near-Term Task Force review of the Fukushima Dai-ichi nuclear accident.

I first want to thank, on behalf of the Commission, Dr. Charles Miller and the other members of the Task Force for all of their work in conducting the 90-day review. I also want to acknowledge the numerous other NRC staff who were available to the Task Force as a resource in conducting its review, as well as the Federal Emergency Management Agency, which engaged the Task Force in discussions of offsite emergency preparedness and provided insights on the U.S. National Response Framework, the Institute of Nuclear Power Operations – which shared information on the industry's post-Fukushima actions, and other groups and individuals who shared their views with the Task Force.

In my testimony today, I would like to provide you with a summary of the Task Force findings and recommendations. My colleagues and I are in the process of developing the Commission's direction to the NRC staff on addressing the Task Force recommendations.

Overview

The Near-Term Task Force was established in response to unanimous Commission direction to conduct a systematic and methodical review of NRC processes and regulations to determine whether the agency should make additional improvements to its regulatory system. The six-member Task Force, who collectively have over 135 years of regulatory experience, was responsible for making recommendations to the Commission for its policy direction in light of the accident at the Fukushima Dai-ichi Nuclear Power Plant. With its 90-day review completed, the Task Force issued its report to the Commission on July 12, 2011. The Commission made the report publicly available on July 13, 2011. The Task Force briefed the Commission on its findings on July 19, 2011.

Overall, the Task Force found that continued operation and continued licensing activities do not pose an imminent risk to public health and safety. The Task Force concluded that a sequence of events like the Fukushima Dai-ichi accident is unlikely to occur in the United States, and that some appropriate mitigation measures have been implemented, reducing the likelihood of core damage and radiological releases. The Task Force was clear, however, that any accident involving core damage and uncontrolled radioactive releases of the magnitude of Fukushima Dai-ichi—even one without significant health consequences—is inherently unacceptable.

The Task Force also concluded that a more balanced application of the Commission's defense-in-depth philosophy using risk insights would provide an enhanced regulatory

framework. Such a framework would support appropriate requirements for increased capability to address events of low likelihood and high consequence, such as prolonged station blackout resulting from severe natural phenomena. This concept is the basis for the Task Force's proposal to redefine the level of protection regarded as adequate and provides the foundation for the Task Force's recommendations.

The Task Force report included a comprehensive set of twelve overarching recommendations. The Task Force recommendations are intended to clarify and strengthen the regulatory framework for nuclear power plants, and are structured around the focus areas of the NRC's defense-in-depth philosophy as applied to protection from natural phenomena; mitigation of prolonged station blackout events; and emergency preparedness. The Task Force also provided recommendations to improve the effectiveness of the NRC's programs.

In addition to these overarching recommendations, the Task Force report also includes a number of detailed recommendations that provide an integrated implementation strategy. The detailed recommendations are grouped into five categories: 1) a policy statement; 2) rulemakings; 3) orders; 4) staff actions; and 5) long-term evaluation topics. The longer-term evaluation topics are those issues about which sufficient information was not yet available for the near-term Task Force to make specific recommendations, and these topics were therefore deferred for possible consideration as part of the longer-term review.

Recognizing that conducting a rulemaking and the subsequent implementation typically takes several years to accomplish, the Task Force recommended interim actions to be taken in the near-term. The recommended orders are intended to provide those interim safety enhancements for protection, mitigation, and preparedness while the rulemaking activities are conducted.

Regulatory Framework

The Task Force's first recommendation is for the Commission to establish a logical, systematic and coherent regulatory framework for adequate protection that appropriately balances defense-in-depth and risk considerations. In the Task Force's view, the NRC's existing regulatory framework does not apply defense-in-depth and risk insights consistently. For example, beyond design basis events and severe accident issues have sometimes been addressed with new requirements such as the station blackout rule and in other cases have been addressed by voluntary industry initiatives such as severe accident management guidelines (SAMGs) which were not included in NRC requirements. The Task Force concluded that the proposed regulatory framework would serve all stakeholders well to facilitate staff and Commission decision-making, provide transparency and clarity for public stakeholders, and provide stability and predictability for the industry's business decisions on meeting regulatory requirements.

Protection Recommendations

With regard to protection of equipment from natural phenomena, the Task Force concluded that protection of important plant equipment from the appropriate external hazards is a key foundation of safety and that it is essential for nuclear plants to be protected against the appropriate design basis external events.

Design basis external hazards were established during the construction permit phase for operating U.S. plants, and they are not typically revisited through the life of the plant. The last construction permit for an operating U.S. plant was issued in 1978, and for many plants, this was completed in the 1960s. Since that time, there have been significant advancements in the state of knowledge and state of analysis methods for seismic and flooding hazards.

Through the years, various NRC programs have been initiated to evaluate the risk from external hazards, and actions were taken to address plant vulnerabilities that were identified. However, the hazards were not comprehensively reevaluated for all sites and the design basis was not necessarily updated. The Task Force concluded that the state of knowledge of seismic and flooding hazards has evolved to the point that it is appropriate for licensees to reevaluate the designs of existing nuclear power reactors to ensure that structures, systems and components important to safety will withstand such events without loss of capability to perform their intended safety function.

On this basis, the Task Force made its second recommendation, which is for the Commission to require licensees to reevaluate the design basis seismic and flooding hazards and as necessary, upgrade the protection of plant structures, systems and components. In its third recommendation, the Task Force also recommended, as part of the longer-term review, that the NRC evaluate potential enhancements to the capability to prevent or mitigate seismically- induced fires and floods.

The Task Force recognized that the proposed analysis and potential modifications would take time to implement. Therefore, as an interim action, the Task Force recommended seismic and flooding protection walkdowns be completed over the next several months to identify and address plant-specific vulnerabilities and verify the adequacy of monitoring and maintenance for protection features such as watertight barriers and seals.

Mitigation Recommendations

The Task Force also provided recommendations covering several aspects of mitigation of low frequency events. These include mitigation of prolonged station blackout events,

containment overpressure prevention, hydrogen control, spent fuel pool cooling, and onsite emergency response capabilities.

Station Blackout

In order to strengthen the ability of nuclear power plants to deal with the effects of prolonged station blackout events, the Task Force made its fourth recommendation: the development of a comprehensive integrated approach to provide uninterrupted core and spent fuel cooling, and provide integrity of the reactor coolant system and containment. The proposed approach is divided into three phases: (1) an eight hour minimum coping phase; (2) a 72-hour extended coping phase; (3) and an offsite support phase. As an interim measure, the Task Force recommended that licensees be ordered to take reasonable action to protect existing mitigation equipment and to ensure that adequate capability is available to mitigate multiunit accidents.

Containment Overpressure

All boiling water reactors with Mark I containments voluntarily installed hardened wetwell vents in the early 1990's. The wetwell vents are intended to ensure containment integrity is maintained by preventing containment overpressure. The Task Force recommended that Mark I wetwell vents be a requirement and that the wetwell vent designs be enhanced to provide capability to open and to reclose as needed during prolonged station blackout scenarios. Eight boiling water reactor units in the United States have Mark II containment designs. Three of these units have installed hardened vents, and the remaining five units at Columbia, Limerick and Susquehanna have not installed hardened vents. The Task Force concluded that a Mark II under similar circumstances as Fukushima Dai-ichi units 1, 2 and 3, would have suffered similar consequences. Therefore, in its fifth recommendation, the Task Force recommended that reliable hardened wetwell vents be required at all boiling water reactors with Mark II containments. Additionally, the Task Force also recommended that the NRC staff reevaluate

other containment designs as part of the long-term review to ensure that hardened vents are not necessary to mitigate beyond design basis accidents at other facilities.

Hydrogen Control

With regard to hydrogen control, the Task Force recommendation regarding enhanced mitigation of prolonged station blackout would, if implemented, reduce the likelihood of core damage and hydrogen production. This recommendation also includes provisions for backup power for hydrogen igniters in containment designs that require those features. In addition, while primarily aimed at containment overpressure prevention, enhanced wetwell vents for Mark I and Mark II containments designs would provide a reliable means for venting hydrogen to the atmosphere. These steps would greatly reduce the likelihood of hydrogen explosions from a severe accident.

Sufficient information from the detailed sequence of events and cause of hydrogen explosions at the Fukushima Dai-ichi plants was not available, however, for the Task Force to reasonably formulate any further specific recommendations related to combustible gas control. Therefore, in its sixth recommendation, the Task Force recommended that the NRC staff identify insights about hydrogen control and mitigation in primary containment and other buildings as part of the longer-term review.

Spent Fuel Safety

In the area of spent fuel pool safety, the Task Force concluded that the two most important insights from the Fukushima Dai-ichi accident relate to instrumentation to provide information about the condition of the pool and the spent fuel and the plant's capability for spent fuel cooling. To address both of these insights, the Task Force made its seventh recommendation to enhance spent fuel pool makeup capability and instrumentation for the spent fuel pool. Specifically, the Task Force recommended that spent fuel pool instrumentation be required to provide reliable information on the conditions in the spent fuel pool. Additionally,

the Task Force recommended a requirement for spent fuel makeup to have safety-related backup power, and lastly, the Task Force recommended a requirement for a seismically qualified flow path to spray water into the spent fuel pools.

Onsite Emergency Response

The Task Force's eighth and final recommendation for enhanced mitigation capability is in the area of onsite emergency response. The Task Force recommended that the onsite emergency response capabilities be strengthened and integrated for a seamless response to severe accidents.

Emergency Response Recommendations

In addition to protection and mitigation measures, the Task Force examined how the insights from the accident at Fukushima Dai-ichi might inform both onsite and offsite emergency planning in the U.S. While the Task Force believes that the emergency planning basis in the U.S. provides radiological protection to members of the public, the Task Force identified two aspects of the Fukushima Dai-ichi accident that it concluded warrant additional consideration in the U.S. These two aspects are emergency planning for prolonged station blackout events and emergency planning for multiple unit events. In its ninth recommendation, the Task Force recommended that licensees be required to address prolonged station blackout and multiunit events in their facility's emergency plans. Examples of the proposed requirements include backup power supplies for communications equipment, and ensuring adequate staffing is available to respond to an event affecting more than one unit on a multiunit site.

In its tenth and eleventh recommendations, the Task Force proposed several topics that it believes warrant further evaluation during the longer-term review. These topics include protective equipment for emergency responders, qualifications for emergency decisionmakers,

off-site radiation monitoring capability, and training for decisionmakers and the public on radiation safety and the appropriate use of potassium iodide.

NRC Programs

Finally, the Task Force identified one recommendation to enhance NRC programs. The Task Force concluded that enhancements to the NRC inspection program would improve its focus on safety. Specifically, in its twelfth recommendation, the Task Force recommended that the NRC strengthen regulatory oversight of licensee safety performance by balancing the use of risk by providing additional emphasis on defense-in-depth requirements.

Conclusion

In summary, the Task Force identified a number of important recommendations that touch on a broad range of issues. These recommendations seek to clarify the NRC's regulatory framework, to enhance safety through interim actions, orders, and rulemakings, and lastly, to provide recommended topics for long-term evaluation.

With the Task Force report now in hand, the Commission is considering the recommendations and deliberating on the path forward. We have a shared interest in stakeholder participation, including questions and feedback received at the Task Force's public meeting on July 28th. I look forward to ongoing dialogue and exchange of ideas among my colleagues and me in the coming weeks.

Chairman Boxer, Ranking Member Inhofe, Chairman Carper, Ranking Member Barrasso, and Members of the Committee, this concludes my formal testimony today. On behalf of the Commission, thank you for the opportunity to appear before you. We look forward

to continuing to work with you to advance the NRC's important safety mission. We would be pleased to respond to any questions you may have.

Questions from Senator Barbara Boxer

QUESTION 1. **Questions have been raised at two recent EPW hearings about the "emergency authority" provided to you as Chairman, and how you used it following the disaster in Japan. Can you describe the authority provided to you under NRC regulations, including the Reorganization plan of 1980, and whether your actions have been consistent with that authority?**

ANSWER:

My actions have been consistent with the Chairman's emergency authority. Prompted by lessons learned after the Three Mile Island accident in 1979, Reorganization Plan No. 1 or 1980 section 3 "transfer[s]" to the Chairman all authority the Commission would otherwise possess pertaining to a particular nuclear emergency involving NRC-licensed facilities and materials. This Reorganization Plan emergency authority has been interpreted as not limited solely to emergencies involving specific NRC-regulated facilities or materials, and the Commission's Internal Procedures reflect this broad interpretation.

While the function of "declaring" an emergency is described as being included in this Reorganization Plan transfer of authority to the Chairman, the Reorganization Plan nowhere requires that a declaration of emergency occur prior to the Chairman's exercise of emergency authority. This is because the transfer of authority has already occurred by operation of the Reorganization Plan, and is not reliant on a formal Chairman declaration. Nonetheless, after the Japan earthquake and tsunami of March 11, 2011, prompt and frequent notice was given to Commissioners as well as the agency in general that the NRC was in emergency response mode, and I frequently briefed my Commission colleagues on the actions we were taking to

respond to the crisis. I have also provided my Commission colleagues a summary on NRC actions taken in response to the Japan emergency. The NRC General Counsel has advised me that my actions have been consistent with applicable law.

QUESTION 2. **I share your strong commitment to ensuring safety at our nation's nuclear power facilities. In a recent letter to you, I urged the Commission to act transparently and expeditiously on the Task Force's recommendations. It is important that we not leave necessary safety improvements on the shelf while we wait for further study. Can you elaborate on what progress has been made by the Commission since our hearing on August 2nd to develop a plan of action for considering the Task Force recommendations and obtain stakeholder input?**

ANSWER:

The NRC staff sought external stakeholder feedback in a public meeting on August 31, 2011, regarding the Near-Term Task Force (NTTF) recommendations that stakeholders consider to be most important and that the NRC should undertake in the near-term. These recommendations were identified in a notation vote paper (SECY-11-0124, "Recommended Actions to be taken Without Delay from the Near-Term Task Force Report") dated September 9, 2011. A Commission meeting was conducted on September 14, 2011, during which representatives from other Federal and state agencies, the nuclear industry, and interested non-governmental organizations provided their views on the NRC staff's proposed near-term actions. On October 18, 2011, the Commission directed the NRC staff to proceed with action on these recommendations. The NRC staff is currently developing plans and schedules to implement the Commission's direction.

To further inform the prioritization of the balance of the NTTF recommendations, the NRC staff conducted a public meeting with representatives of the nuclear industry on September 21, 2011, in order to better understand their current plans and actions to address the lessons learned from the Fukushima Dai-ichi event. The NRC staff's proposed prioritization of all of the NTTF

recommendations was submitted in a notation vote paper (SECY-11-0137, "Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned") on October 3, 2011. A Commission meeting was conducted on October 11, 2011, during which representatives from other Federal and state agencies, the nuclear industry, and interested non-governmental organizations provided their views on the NRC staff's proposed prioritization. SECY-11-0137 is currently under review by the Commission.

QUESTION 3. **The Task Force said a "patchwork of regulatory requirements" developed "piece-by-piece over the decades" should be replaced with a "logical, systematic and coherent regulatory framework" to bolster reactor safety. How do you reconcile these facts with the Task Force's statement that "continued operation and continued licensing activities do not pose an imminent risk to public health and safety?"**

ANSWER:

It is important to note that the Near-Term Task Force's (NTTF's) work reinforces the NRC's confidence in the continued safe operation of, and emergency planning for, U.S. nuclear power plants. The NTTF found that operating nuclear power plants are protected against low likelihood severe natural phenomena and have accident mitigation capabilities such that continued operation poses no imminent risk to public health and safety.

The phrase "patchwork of regulatory requirements" was not meant to imply that a gap in the regulations was identified. Rather, the NTTF found that, over the years, the NRC has addressed beyond-design-basis events on a case-by-case basis, with some elements being addressed by voluntary industry initiatives and others by specific regulations, thereby creating a "patchwork" regulatory framework. To ensure a consistent regulatory approach for these types of events, the NTTF recommended that the Commission establish a policy for balanced layers of defense against severe accidents, including protection, mitigation, and emergency preparedness, and, where appropriate, enhance the Commission's regulatory requirements within the new framework.

QUESTION 4. **I understand that the Natural Resources Defense Council has filed 18 petitions for Commission rulemakings or orders based on recommendations from the NRC Task Force. I also understand that NRC staff ordinarily responds on the sufficiency of such petitions for rulemaking or orders within 30 days of receiving the petitions. Do you think NRC staff has sufficient information to docket the petitions and move forward with rulemakings and orders? If not, how will the Commission proceed?**

ANSWER:

The NRC has received twelve petitions for enforcement action (under Title 10 of the *Code of Federal Regulations* (10 CFR) Section 2.206) and six petitions for rulemaking (under 10 CFR 2.802) from the Natural Resources Defense Council (NRDC), related to the NRC Near-Term Task Force (NTTF) recommendations. NRDC recently submitted a seventh petition for rulemaking addressing combustible gases. Because the different types of petitions are governed by different processes, separate responses are provided below for the two different types of petitions.

Petitions for Enforcement Action Filed Under 10 CFR 2.206: The NRC is processing the twelve petitions from NRDC (the petitioner) as a single action requesting that the NRC order licensees to take actions corresponding to recommendations by the NTTF to enhance plant safety after Fukushima. The NRDC cites the NTTF Report as the sole rationale and basis for the requests; no new information was provided. Under NRC Management Directive 8.11, "Review Process for 10 CFR 2.206 Petitions," the petitioner is offered the opportunity for a public meeting to address the NRC's Petition Review Board (PRB) prior to the PRB making an initial

recommendation regarding acceptance of the petition. Having scheduled a public meeting with the petitioner for September 7th, NRDC asked to reschedule the meeting because of a desire to review the NRC staff recommendations to the Commission on the NTTF Report (see SECY-11-0124, "Recommended Actions to be taken Without Delay from the Near-Term Task Force Report," and SECY-11-0137, "Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned") prior to meeting with the PRB. Since, per Management Directive 8.11, the PRB would normally meet with a petitioner within two weeks of receipt of the petition, the NRC staff informed the petitioner that unless NRDC would like to have the public meeting by the end of October, the PRB would meet in November to decide on an initial recommendation, but would engage with the petitioner prior to developing its final recommendation. The petitioner's latest response, by email on October 26, 2011, stated that NRDC would like to meet with the PRB in December. The petitioner further stated that the Commission has taken up most of the issues in this petition and those issues are currently before the NRC staff. Hence, the PRB intends to meet in November to decide on an initial recommendation and meet with the petitioner in mid-December per NRDC's request before preparing its final recommendation regarding acceptance of the petition.

Petitions for Rulemaking Filed Under 10 CFR 2.802: The NRC has accepted, docketed, and noticed in the *Federal Register* the first six NRDC petitions for rulemaking (PRMs) related to the NTTF recommendations. These PRMs request the NRC to undertake the specific rulemaking activities recommended by the NTTF and cite the NTTF report as the sole rationale and basis for the rulemaking requests; no new information was provided. Because the Commission has already directed the NRC staff to proceed with rulemaking regarding station blackout events, the NRC is proceeding to evaluate the NRDC petition (PRM-50-101) that is associated with the station blackout rule. The other five PRMs will be held in abeyance until the Commission has

given direction to the NRC staff on how to proceed with the NTTF topics associated with each of the PRMs.

The seventh NRDC PRM related to the Fukushima events was submitted on October 14, 2011, and requests that the NRC add requirements for the control of combustible gases (hydrogen) during accidents (NTTF Recommendation 6). The NRC is in the process of determining the sufficiency of this petition for docketing. The NRC will strive to issue the Notice of Receipt for this PRM within the 30-day goal stated in 10 CFR 2.802.

QUESTION 5. **The NRC took decisive actions after the tragedy of [September 11, 2001], ordering U.S. nuclear power plants to take a series of improved security measures. The NRC later codified those orders in regulations, with compliance required by March 31, 2010. In what ways is the process recommended by the Task Force parallel to what was used after 9/11? What assurance do we have that it will not take the Commission nearly a decade to implement the Task Force's recommendations to improve the safety of nuclear power reactors in the United States?**

ANSWER:

After the attacks of September 11, 2001, the Commission established new security requirements on the basis of adequate protection. These new requirements were not the result of immediate or imminent threats to NRC-licensed facilities, but rather resulted from new insights regarding potential security events. Similarly, after Japan's recent earthquake and tsunami and the resulting accident at the Fukushima Dai-ichi nuclear power plant, the Commission established a senior level task force known as the Near-Term Task Force (NTTF) to conduct both a short- and long-term analysis of potential lessons learned. The report produced by the NTTF identified twelve major recommendations with the potential to improve the safety of U.S. nuclear facilities.

The NRC is taking action on the Task Force recommendations. In the Staff Requirements Memorandum (SRM) dated October 18, 2011, "Recommended Actions to be taken Without Delay from the Near Term Task Force Report," the Commission directed the NRC staff to begin action without delay on those Near-Term Task Force recommendations with the greatest potential for safety improvement in the near term. In that SRM, the Commission directed that

the NRC should strive to complete and implement the lessons learned from the Fukushima accident within 5 years – by 2016. In addition, the Commission directed that the staff should designate the station blackout (SBO) rulemaking as a high-priority rulemaking with a goal of completion within 24 to 30 months of the October 18, 2011 SRM.

The NRC staff developed a framework to methodically and systematically review the NTTF recommendations. The NRC staff's proposed prioritization of the NTTF recommendations was submitted in a notation vote paper (SECY-11-0137, "Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned") on October 3, 2011. The NRC staff has proposed to implement the recommendations, as appropriate, in accordance with established regulatory vehicles (i.e., Orders or Rulemaking). SECY-11-0137 is currently under review by the Commission.

In addition, the NRC staff also continues to evaluate approaches to implement all of the other recommendations that have resulted from the Fukushima Dai-ichi accident.

QUESTION 6. **It is my understanding that none of the spent fuel in dry cask storage at Fukushima was damaged or released radiation. If a facility transfers its spent fuel from pools to dry cask storage, wouldn't the consequences of an accident be lessened due to the reduced amount of fuel in its pool? If so, why doesn't the NRC reduce this risk in communities across the Nation by compelling spent fuel to be transferred to dry casks?**

ANSWER:

The NRC believes spent fuel pools and dry casks both provide adequate protection of public health and safety. Regarding the event at Fukushima, the information the NRC has to date indicates there was no significant offsite radioactive release from spent fuel stored in either the spent fuel pools or the dry casks. Although the NRC had some early concern with loss of water from the pools during the event, it now appears that the pools may have maintained an adequate inventory of water during the event, and the addition of water to the pools has maintained cooling of the stored fuel. We have not learned anything so far in our review of the Fukushima event that would indicate there is a safety or security reason to mandate accelerated transfer of spent fuel from pool storage to casks.

Consistent with the NRC mission of ensuring the protection of public health and safety, the NRC is continuing research regarding the behavior of spent fuel pools following a loss of cooling water. This effort includes an ongoing study of the effect of removing older fuel from the pool in an expedited manner and placing it in dry storage. The NRC recognizes that there are numerous details to consider when moving spent fuel to dry cask storage and plans to explore issues to ensure the safety of spent fuel storage.

QUESTION 7. **The Task Force concluded that a sequence of events like what occurred in Japan is unlikely to occur in the United States. Yet, the Task Force still recommended numerous safety improvements for nuclear power facilities around the country. In your view, what is the primary lesson learned from the accident in Japan thus far?**

ANSWER:

The primary lesson learned from the accident in Japan is a reinforcement of the importance of defense in depth in providing protection for public health and safety. This lesson has three important aspects. The first aspect is that each of the three fundamental defense in depth strategies (protection, mitigation, and emergency planning) is essential. The second aspect is that each strategy needs to be robust in itself and complementary to the other strategies, but independent from other strategies to the extent possible. The third aspect is that each strategy needs to seek out in a timely manner new information (e.g., updated seismic hazards information) that is necessary to maintain its level of effectiveness.

QUESTION 8. **The Union of Concerned Scientists (UCS) issued a response to the NRC Task Force's report, in which it urged the NRC to modify current emergency planning requirements. UCS urged the NRC to require plants to develop such plans based on a scientific assessment of the populations at risk for each site, rather than artificially limiting plans to areas within the current 10-mile planning zone. Do you agree that the NRC should re-evaluate current requirements for emergency preparedness and evacuation plans in light of what happened in Japan.**

ANSWER:

The Near-Term Task Force provided several recommendations that are intended to clarify and strengthen the current emergency preparedness regulatory framework. These recommendations may lead to the identification of issues that will warrant further study and longer term actions. As such, the NRC will continue to evaluate all of its current regulatory requirements to ensure that adequate protection of the public's health and safety will be maintained. In addition, the NRC staff in SECY 11-0137, "Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned," identified re-evaluation of the basis of emergency planning zone sizes as an additional recommendation warranting further consideration and potential prioritization.

QUESTION 9. **California's two nuclear power plants are located in areas of high seismic activity and I am concerned about their ability to withstand earthquakes. The Task Force has recommended requiring nuclear plants to confirm their seismic flooding hazards every 10 years and to address any new and significant information with safety upgrades. Do you agree that nuclear power plants in the United States should periodically re-evaluate seismic and flooding hazards in light of what has occurred in Japan?**

ANSWER:

The NRC staff identified the ten-year confirmation of seismic and flooding hazards as an item for long-term evaluation in SECY-11-0137, "Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned." The NRC staff is in the process of developing additional information regarding an approach and schedule for addressing this issue. However, the NRC staff also recommended near-term regulatory activities to interact with stakeholders and develop information requests. Licensees will be requested to: (1) re-evaluate site-specific seismic and flooding hazards, (2) perform seismic and flood protection plant walk-downs, and (3) identify actions that have been taken or planned to address plant-specific issues associated with the updated hazards or identified during the plant walk-downs. Information received from these near-term actions will be used to further inform the Commission's position regarding the periodic re-evaluation of seismic and flooding hazards.

Questions from Senator Thomas R. Carper

Question 1. **Can you explain how the NRC uses a mix of voluntary and mandatory regulations to ensure safety? How does the NRC ensure voluntary regulations are being enacted?**

ANSWER:

The NRC does not rely on voluntary measures to ensure safety. The agency affords adequate protection (safety) through the use of mandatory measures such as regulations, Orders and license conditions.

Regulatory commitments and voluntary programs can be useful since often they can be implemented more quickly than NRC requirements and they typically afford the licensee more flexibility to address the given situation. A licensee's implementation of a voluntary program may stem from the NRC encouraging the licensee to take additional actions beyond what is necessary to ensure adequate protection, but which provide added margin with respect to the overall safety of the facility. Under this scenario, there can be significantly reduced controls, and NRC typically does not inspect the voluntary program as part of its normal reactor oversight program.

QUESTION 2. **I can see a role for voluntary regulations - they can be quickly implemented without waiting on the federal government. However, they are meaningless if they are never enacted or not sustained over time. I was disappointed to see that when the NRC did a review of the voluntary severe accident management guidelines - very few plants were implementing all of the guidelines. Some plants were implementing very few of the guidelines at all. Can the NRC enforce voluntary programs without codifying them into law? What are the advantages and disadvantages of codifying voluntary programs? Should there be a time period after which all voluntary programs should become regulatory statute?**

ANSWER:

NRC regulations address specific safety, technical, or operational issues. By statute, NRC is required to put in place those regulations needed to ensure adequate protection of public health and safety, and the environment. For safety, technical, or operational issues that do not rise to the level of adequate protection, the NRC may pursue regulations in those areas if they provide a substantial increase in the overall protection of public health and safety. Alternatively, for those issues that do not rise to the level of adequate protection, the nuclear industry could voluntary develop and adopt an initiative to address a particular issue. However, the NRC does not routinely inspect the implementation of the voluntary industry initiatives, and cannot enforce them.

A voluntary program could be advantageous in allowing the NRC to focus resources on those issues of the highest safety importance, while allowing issues of low safety or risk importance to

be addressed through voluntary programs. The NRC would not expend resources on the development of regulations and oversight of the residual issues. The disadvantages of a voluntary program is that if the issue of concern has a nexus to safety and, NRC determined that the issue was not being sufficiently addressed, we would be delayed in our ability to take effective action.

The NRC would not codify a voluntary industry initiative. Rather, if needed, the NRC would put in place regulations that address the particular safety, technical, or operational issue of concern. There is no time period associated with putting in place regulations for an issue that is being addressed through a voluntary industry initiative. Rather, the decision to put in place regulations would be dependent upon the safety significance of the issue.

QUESTION 3. **What we do know about the Fukushima [event] is that the Japanese underestimated the risk of that great of a tsunami and earthquake for that facility. I want to be sure that we are not underestimating our risks here at home. Please list the last time the NRC evaluated the seismic and flooding hazards for each of the 104 nuclear power plants.**

ANSWER:

The NRC requires that safety-significant structures, systems, and components at U.S. nuclear power plants be designed to take into account even rare and extreme seismic and tsunami events. All 104 U.S. nuclear power plants are built to withstand external hazards, including earthquakes, flooding, and tsunamis, as appropriate. Each plant's capability to withstand external hazards relevant to its site is reviewed by the NRC during its initial licensing.

The NRC has also made substantial effort over time to ensure that vulnerabilities to both internal and external hazards are considered and mitigated in the current design and licensing basis of its regulated facilities. The NRC routinely inspects the licensee's policies and procedures associated with responding to seismic and flooding hazards; as well as inspecting the licensee's structures, systems, and components used to mitigate the hazards. The NRC has also conducted two reviews of its regulated facilities over the last 25 years to ensure that they have included both internal and external hazards in their current plant design and licensing basis. These reviews are as follows:

(1) In 1988, the NRC's Generic Letter No. 88-20, "Individual Plant Examination for Severe Accident Vulnerabilities," requested plant owners to perform a systematic evaluation of plant-specific vulnerabilities and report the results to the Commission.

(2) In the mid to late 1990s, the NRC staff reviewed the potential for ground motions beyond the design basis as part of the Individual Plant Examination of External Events. From this review, the NRC staff determined that seismic designs of operating nuclear plants in the U.S. have adequate safety margins for withstanding earthquakes.

In addition, the NRC was in the process of performing a generic review of seismic hazards for existing plants before the Fukushima event occurred. This effort, knows as Generic Issue-199, "Implications of Updated Probabilistic Seismic Estimates in Central and Eastern United States on Existing Plants," will be incorporated into the NRC effort to re-evaluate the seismic hazards at U.S. nuclear plants in light of the Fukushima event, as outlined in SECY-11-0137, "Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned."

Questions from Senator Benjamin Cardin

QUESTION 1. **If the Commission delays action on Task Force recommendations on the grounds that you do not have enough information yet about what happened at Fukushima to move forward, does that suggest that the NRC also does not have enough information to move forward with re-licensing existing reactors or licensing new reactors?**

ANSWER:

The NRC is not delaying action on Task Force recommendations. Rather, the Commission is prioritizing the Task Force recommendations based on their potential level of safety significance. In the Staff Requirements Memorandum (SRM) dated October 18, 2011, "Recommended Actions to be taken Without Delay From The Near-Term Task Force Report," the Commission directed the NRC staff to begin action without delay on those Near-Term Task Force recommendations with the greatest potential for safety improvement in the near-term.

The NRC continues to believe that its regulatory framework and requirements provide for a rigorous and comprehensive license review process that examines the full extent of design, siting, and operation of nuclear power plants. Therefore, the agency is continuing to process existing applications for new reactors and license renewal applications in accordance with the schedules that have been established. The NRC has the necessary regulatory tools to require changes to existing licenses or certified designs should the agency determine that such changes are necessary.

Questions from Senator James M. Inhofe

QUESTION 1. **Commissioner Apostolakis cited in his opening statement that "there is growing evidence that the historical record of tsunamis had not been used properly to determine the design basis of Fukushima Daiichi and consequently the protection of the plant was not sufficient." He added that "it was not unthinkable or unforeseen."**

- **Please explain how an accident triggered by a design basis improperly calculated in a different regulatory system provides a basis for concluding that our existing regulatory framework is no longer acceptable, especially without having analyzed the comparative differences in regulatory requirements.**

- **Please describe any evidence from the Fukushima event that indicates our regulations would not have been adequate.**

ANSWER:

The NRC places an emphasis on learning from operating experience, both foreign and domestic, in order to ensure that the operation of U.S. nuclear facilities does not pose an unacceptable risk to public health and safety. The event at Fukushima Dai-ichi is a prime example of operating experience from which both the NRC and the U.S. nuclear industry can potentially learn a great deal. Although the outcome of the event may have been influenced by the approach taken in Japan to determining the facility's design basis tsunami and/or by the particular characteristics of the Japanese regulatory system, it reinforces the importance of ensuring that U.S. nuclear facilities are adequately protected from similar extreme external events. As with any piece of operating experience, the NRC proposes to learn as much as

possible from the event at Fukushima and apply that knowledge to further the NRC's safety mission here in the U.S.

QUESTION 2. **You have repeatedly stated that U.S. plants are safe and the task force says there is no imminent risk, yet you continuously refer to the "urgency of these safety issues" and the need to proceed "expeditiously." What specific evidence from the Fukushima accident supports your sense of urgency?**

ANSWER:

The NRC has been very closely monitoring the activities in Japan and reviewing all available information associated with the events at the Fukushima Dai-ichi nuclear power plant. The NRC's urgency to proceed with a subset of NTTF recommendations is based upon its consideration of the relative safety benefit to be derived from each recommendation as it would contribute to maintaining the NRC's defense-in-depth philosophy. The NRC's urgency to begin the process of stakeholder interaction on this subset of NTTF recommendations is related to its desire to provide ample opportunity for all NRC stakeholders to inform the NRC of their views regarding these important topics and to assist the NRC in formulating the correct course of action for U.S. nuclear facilities.

QUESTION 3. **Your colleagues voted on this matter on July 19, July 27, and July 29. You did not vote until August 9. Please indicate how many times you requested an extension of voting time, the length of those extensions, and why you were unable to vote in a timely manner considering the importance of the matter and your stated desire to move forward expeditiously.**

ANSWER:

This question refers to SECY-11-0093, "Near Term Report and Recommendations for Agency Actions following the Events in Japan," dated July 12, 2011. I filed my initial, timely comments on August 9th, which was during the period of a single Commission-endorsed 5-day extension to vote that followed all of the Commission's established processes. Rather than focusing my vote on process issues, my seven-page vote offered my policy views on each of the twelve nuclear safety recommendations made by the Commission's task force. Leading up to my vote, I proposed a detailed plan for collegial Commission review of the task force report that included Commission meetings with stakeholders, a federal register notice seeking public comment, and additional staff input.

QUESTION 4. **In your speech at the Press Club, you stated: "As Chairman, I'm committed to ensuring that the Commission has all the information it needs to make timely decisions and take decisive actions in response to the task force recommendations." Yet you directed the Executive Director for Operations (EDO) to withdraw his recommendations to the Commission on how to proceed with the task force recommendations. Do you believe your direction to the EDO is consistent with your Press Club statement?**

ANSWER:

My actions were consistent with my statutory responsibilities and are in the best interests of nuclear safety.

QUESTION 5. **Do you believe it is appropriate in your role as Chairman to screen materials before agency staff provides them to the Commission?**

ANSWER:

As Chairman, I am responsible for the day-to-day administration of the agency, managing the staff, executing Commission decisions, keeping the Commission informed on matters within the Commission's functions, and for developing policy planning and guidance for consideration by the Commission.

QUESTION 6: **The Commission provides direction to the EDO to carry out staff actions. Do you believe it is within your authority as the agency's principal executive officer to interpret the Commission's direction?**

ANSWER:

As a general matter, yes, that is within my direction. Under Reorganization Plan No. 1 of 1980 § 2(b), the Chairman is specifically responsible "for assuring that the Executive Director for Operations and the staff of the Commission. . . are responsible to the requirements of the Commission in the performance of its functions." Thus, the Chairman is ultimately responsible and accountable for the EDO's response to Commission direction and any necessary interpretation of such direction. In addition, § 4(b) of the Reorganization Plan states that "[t]he Executive Director for Operations shall report for all matters to the Chairman," thereby further confirming the Chairman's supervisory role vis-à-vis the EDO. The Commission does, however, have the ability to clarify any direction it has given to agency staff if it believes that implementation is not consistent with the Commission's intent. Additionally, under the Commission's Internal Procedures, the Chairman shares draft tasking memoranda with the Commission before issuing the memoranda to agency staff, which further promotes consistency between Commission direction and staff response.

QUESTION 7. **Is the Japanese nuclear safety regulator independent, as the NRC is in the U.S.?**

ANSWER:

Currently, Japan has a nuclear regulatory structure that involves multiple organizations collaborating with an overarching "double check" by a Diet-appointed Commission. The Nuclear and Industrial Safety Agency (NISA) is responsible for approximately 85% of the regulatory program; NISA is a subdivision of Japan's Ministry of Economy, Trade and Industry, an organization with a broad portfolio that includes both regulatory and promotional aspects of nuclear energy. The Japanese Government is preparing to separate the regulatory portion from the promotional portion, by assigning the new regulatory body to Japan's Ministry of the Environment. This reorganization is scheduled to take place in April 2012.

QUESTION 8. **Does the Japanese nuclear safety regulator calculate tsunami risk the same way the NRC does?**

ANSWER:

We believe the Japanese regulator and the NRC determine tsunami risk differently. Our current understanding is that the Japanese regulator uses a deterministic method to verify the design tsunami by using criteria based on historical records.

The NRC uses a hierarchical three step approach to determine tsunami risk at U.S. nuclear facilities. The first two steps eliminate regions and plants having no tsunami risk. The third step assesses risk at facilities where the elevation of safety significant structures, systems and components cannot be conclusively shown to exceed the calculated tsunami run-up. The assessment is based on numerical modeling of elements including source modeling, wave propagation and shoreline inundation. Tsunami heights determined by modeling must exceed all known historical tsunami heights.

Regardless of approach used, it is important to make correct assumptions and to use all available information, including information on uncertainty.

QUESTION 9. **Do Japanese nuclear plants provide a similar level of protection for their emergency generators and fuel tanks as US plants do?**

ANSWER:

In Japan and the U.S., all safety equipment, including emergency diesel generators and fuel tanks, is designed and maintained to specifications that ensure, with a margin of safety, that the equipment will work when needed. Correctly anticipating conditions that may occur during an event is critical to ensuring the emergency equipment is sufficiently designed and protected.

Based on the lessons learned from Fukushima, the United States, Japan, and other countries are taking steps to ensure that design assumptions at all nuclear plants are sufficient to ensure the protection of emergency equipment.

QUESTION 10. **Is the licensing process for Japanese reactor operators administered by an independent regulator with a comparable level of rigor to the NRC's process?**

ANSWER:

NRC requirements for reactor operator licensing are found in 10 CFR Part 55. In Japan, the Nuclear and Industrial Safety Agency (NISA) administers the licensing of reactor operators. NISA has responsibility over licensees for safety examination, licensing, inspection, and hearings on incidents and events. NISA exists as a part of the Ministry of Economy, Trade and Industry (METI). METI, through the Agency for Natural Resources and Energy (ANRE), also promotes nuclear power. The Japanese Government is preparing to separate the regulatory portion from the promotional portion, by assigning the new regulatory body to Japan's Ministry of the Environment, this reorganization is scheduled to take place in April 2012. Japan's Nuclear Safety Commission (NSC) provides oversight of NISA's licensing and inspection activities.

Beyond this structure, the NRC does not currently have sufficient information to make a more detailed comparison.

QUESTION 11. **Are Japanese reactor operators authorized to take any and all actions necessary to protect public health and safety the way we do, without seeking corporate or political input?**

ANSWER:

The licensed operators of United States nuclear facilities are authorized and expected to take any and all actions necessary to protect public health and safety without seeking corporate or political input. In addition, U.S. regulations provide that a licensee may take reasonable action that departs from a license condition or a technical specification in an emergency, when this action is immediately needed to protect public health and safety and no action consistent with license conditions and technical specifications that can provide adequate or equivalent protection is immediately apparent. NRC does not have information on the requirements for reactor operators in Japan.

The NRC, other U.S. government agencies, and the U.S. nuclear industry remain actively involved in the process of developing an understanding of the precise sequence of events which occurred at Fukushima Dai-ichi in the wake of the March 11, 2011 tsunami.

Senator BOXER. Thank you.
Commissioner Svinicki.

STATEMENT OF HON. KRISTINE L. SVINICKI, COMMISSIONER, NUCLEAR REGULATORY COMMISSION

Ms. SVINICKI. Thank you very much. Thank you, Chairman Boxer, Ranking Member Inhofe, Chairman Carper and Ranking Member Barrasso and other Members of the Committee for the opportunity to appear before you today.

The members of NRC's near-term task force covered tremendous ground in the conduct of their 90-day review. After a more extensive examination than earlier NRC efforts were able to undertake, the task force concluded that a sequence of events like the Fukushima accident is unlikely to occur in the United States and that continued operation and continued licensing activities do not pose an imminent risk to public health and safety.

In providing this safety reassurance to the commission and the public, the task force's work, conducted with some urgency given their mission of finding any near-term deficiencies or confirming the safety of continued operations, now allows the NRC the opportunity to proceed with the systematic and methodical review of lessons learned that the commission established early on.

I believe that wise regulatory decisions depend on public participation and on careful analysis of the likely consequences of regulation. The NRC is now in a position to conduct activities that the task force's short timeframe did not allow them to undertake, namely a more extensive public stakeholder engagement on these issues and others that will likely emerge, and opportunities to consider a comprehensive set of facts regarding the events in Japan, and to receive the expert views of the commission's Advisory Committee on Reactor Safeguards.

In that vein, I view the near-term task force report as an important first step in the process of learning from the events at Fukushima. The conclusions drawn by the six individual members of the near-term task force must now be open to challenge by our many public stakeholders and tested by the scrutiny of a wider body of experts, including the NRC's technical staff who would be responsible for carrying out the changes the commission might adopt prior to final commission decisionmaking on those changes.

I support acting with the appropriate dispatch and urgency, but without short-changing the thoroughness, inclusiveness and deliberation of our response.

Thank you again for this opportunity and I look forward to answering your questions.

[The prepared statement of Ms. Svinicki follows:]

Commissioner Kristine L. Svinicki's Responses to Questions for the Record
Environment and Public Works Committee Hearing
August 2, 2011

Senator Barbara Boxer

1. **The Task Force concluded that a sequence of events like what occurred in Japan is unlikely to occur in the United States. Yet, the Task Force still recommended numerous safety improvements for nuclear power facilities around the country. In your view, what is the primary lesson learned from the accident in Japan thus far?**

   In my view, the primary lesson learned from the accident in Japan is the need to ensure that we maintain a willingness to question and examine the bases of our regulatory action in light of any new information. We must also use this tragic event to advance the goals of nuclear safety – both domestically and within the international cooperative framework. Fukushima reminds us to challenge our current assumptions regarding fundamental preparedness to respond to the unlikely or unexpected.

2. **The Union of Concerned Scientists (UCS) issued a response to the NRC Task Force's report, in which it urged the NRC to modify current emergency planning requirements. UCS urged the NRC to require plants to develop such plans based on a scientific assessment of the populations at risk for each site, rather than artificially limiting plans to areas within the current 10-mile planning zone. Do you agree that the NRC should re-evaluate current requirements for emergency preparedness and evacuation plans in light of what happened in Japan?**

   The NRC's Near-Term Task Force provided several recommendations that are intended to clarify and strengthen the current emergency preparedness regulatory framework. These recommendations may lead to the identification of additional issues that will warrant further study and longer term actions. As such, the NRC will continue to evaluate all of its current regulatory requirements to ensure that adequate protection of public health and safety will be maintained. In my view, this evaluation should also assess the facts as we are able to gather them regarding the Japanese experience with evacuation and relocation of the affected population, as well as any differences between the Japanese and U.S. regulatory systems.

3. **California's two nuclear power plants are located in areas of high seismic activity and I am concerned about their ability to withstand earthquakes. The Task Force has recommended requiring nuclear plants to confirm their seismic flooding hazards every 10 years and to address any new and significant information with safety upgrades. Do you agree that nuclear power plants in the United States should periodically re-evaluate seismic and flooding hazards in light of what has occurred in Japan?**

   Yes. The NRC staff is in the process of developing additional information regarding an approach and schedule for addressing this issue. Licensees will be requested to: (1) re-evaluate site-specific seismic and flooding hazards, (2) perform seismic and flood protection plant walk-downs, and (3) identify actions that have been taken or planned to address plant-specific issues associated with the updated hazards or identified during the plant walk-downs. Information received from these near-term actions will be used to further inform potential regulatory actions going forward.

Senator Thomas R. Carper

1. **Can you explain how the NRC uses a mix of voluntary and mandatory regulations to ensure safety? How does the NRC ensure voluntary regulations are being enacted?**

   The NRC does not rely on voluntary measures to ensure adequate protection of public health and safety. The agency ensures adequate protection through the use of mandatory measures such as regulations, license conditions, and orders. These measures are supported by regulatory guides, standard review plans, and other similar tools.

   For issues that are above and beyond what is needed to provide reasonable assurance of public health and safety, voluntary initiatives can be an optimal vehicle to achieve desired outcomes. The manner in which a regulatory commitment or voluntary program is treated by the licensee and by the NRC staff can vary, depending on the nature of the regulatory commitment or voluntary program and its relation to a regulatory requirement. For example, the NRC may use a licensee's regulatory commitments to help decide if further regulatory actions need to be taken. Under such circumstances, the NRC would typically perform an inspection to determine if the licensee is implementing the regulatory commitment, if the regulatory commitment is being managed through the licensee's commitment tracking system, and whether the regulatory commitment should be placed into a controlled document such as the final safety analysis report. Alternatively, the licensee's implementation of a voluntary program may stem from the NRC encouraging the licensee to take additional actions that may not be necessary to ensure adequate protection, but which provide added margin with respect to the overall safety of the facility. Inspection of the implementation of voluntary industry initiatives is done on a case-by-case basis.

2. **I can see a role for voluntary regulations - they can be quickly implemented without waiting on the federal government. However, they are meaningless if they are never enacted or not sustained over time. I was disappointed to see that when the NRC did a review of the voluntary severe accident management guidelines - very few plants were implementing all of the guidelines. Some plants were implementing very few of the guidelines at all. Can the NRC enforce voluntary programs without codifying them into law? What are the advantages and disadvantages of codifying voluntary programs? Should there be a time period after which all voluntary programs should become regulatory statute?**

   By statute, NRC is required to put in place those regulations needed to ensure adequate protection of public health and safety. For safety, technical, or operational issues that do not rise to the level of adequate protection, the NRC may pursue regulations in those areas if they provide a substantial increase in the overall protection of public health and safety and are cost-justified. Alternatively, for those issues that do not rise to the level of adequate protection, the nuclear industry could voluntarily develop and adopt an initiative to address a particular issue. The NRC does not enforce voluntary industry programs because they are not regulatory requirements necessary to ensure adequate protection of public health and safety.

   Voluntary programs are advantageous when they allow the NRC to focus resources on those issues of the highest safety importance, while allowing issues of low safety or risk importance to be addressed voluntarily by licensees. There is no time period associated with putting in place regulations for an issue that is being addressed through a voluntary industry initiative.

What we do know about Fukushima is that the Japanese underestimated the risk of that great of a tsunami and earthquake for that facility. I want to be sure that we are not underestimating our risks here at home. Please list the last time the NRC evaluated the seismic and flooding hazards for each of the 104 nuclear power plants.

The NRC requires that safety-significant structures, systems, and components at U.S. nuclear power plants be designed to take into account even rare and extreme seismic and tsunami events. All 104 U.S. nuclear power plants are built to withstand external hazards, including earthquakes, flooding, and tsunamis, as appropriate. Each plant's capability to withstand external hazards relevant to its site is reviewed by the NRC during its initial licensing.

The NRC has also made substantial effort over time to ensure that vulnerabilities to both internal and external hazards are considered and mitigated in the current design and licensing basis of its regulated facilities. The NRC routinely inspects the licensee's policies and procedures associated with responding to seismic and flooding hazards; as well as inspecting the licensee's structures, systems, and components used to mitigate the hazards. The NRC has also conducted two reviews of its regulated facilities over the last 25 years to ensure that they have included both internal and external hazards in their current plant design and licensing basis. These reviews are as follows:

(1) In 1988, the NRC's Generic Letter No. 88-20, "Individual Plant Examination for Severe Accident Vulnerabilities," requested plant owners to perform a systematic evaluation of plant-specific vulnerabilities and report the results to the Commission.

(2) In the mid to late 1990s, the NRC staff reviewed the potential for ground motions beyond the design basis as part of the Individual Plant Examination of External Events. From this review, the NRC staff determined that seismic designs of operating nuclear plants in the U.S. have adequate safety margins for withstanding earthquakes.

In addition, the NRC was in the process of performing a generic review of seismic hazards for existing plants before the Fukushima event occurred. This effort, known as Generic Issue-199, "Implications of Updated Probabilistic Seismic Estimates in Central and Eastern United States on Existing Plants," will be incorporated into the NRC effort to re-evaluate the seismic hazards at U.S. nuclear plants in light of the Fukushima event, as outlined in SECY-11-0137, "Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned."

Through these substantial efforts, the NRC has ensured that the risk associated with seismic and flooding hazards is not underestimated at nuclear power plants in the U.S. The NRC remains convinced that U.S. nuclear power plants are designed and operated in a manner that protects public health and safety.

Senator James M. Inhofe

1. **Why do you think a more rigorous process is important to the objective of nuclear safety?**

   The NRC's Near-Term Task Force found that a sequence of events like the Fukushima Dai-ichi accident is unlikely to occur in the United States, and that continued operation and continued licensing activities do not pose an imminent risk to public health and safety. Therefore, we are in a position to take deliberate, yet expeditious, action commensurate with our level of understanding of the events in Japan. We expect that the set of facts regarding the sequence of events and accident progression at Fukushima Dai-ichi will continue to grow, and our level of understanding will continue to evolve over the next several years. A comprehensive set of facts regarding what transpired in Japan is crucial to ensuring that we correctly identify and diagnose issues that may require NRC action for continued assurance of adequate protection of public health and safety.

2. **You urge scrutiny of the task force proposal by the ACRS. How will their expert testimony serve the objective of ensuring public health and safety? Do you believe that Chairman Jaczko's March 23 tasking memorandum adequately harnessed their expertise?**

   Statutorily mandated by the Atomic Energy Act of 1954, as amended, the Advisory Committee on Reactor Safeguards (ACRS) reviews and reports on safety studies and reactor facility license and license renewal applications; advises the Commission on the hazards of proposed and existing production and utilization facilities and the adequacy of proposed safety standards; initiates reviews of specific generic matters or nuclear facility safety-related items; and provides advice in the areas of health physics and radiation protection. Throughout my tenure on the Commission, I have found that the ACRS provides valuable insights and advice to the Commission. The Committee's advice reflects the breadth and depth of the collective knowledge and experience of the Committee's members, as well as the diversity of their views. The Task Force's recommendations span a wide variety of complex issues with varying safety implications and potentially significant regulatory impacts. This calls for regular ACRS engagement on the longer term review. The March 23 tasking memorandum's direction to have the ACRS review the Near-Term Task Force report was an appropriate first step. The ACRS's continued engagement will be essential as the agency moves forward.

3. **The Chairman has repeatedly commented that failure to implement the task force recommendations may delay new plant applications. Do you agree with that assessment?**

   No, I do not. The NRC has the regulatory mechanisms to apply any new requirements the Commission may adopt in response to the lessons-learned arising from the events at Fukushima to licensees of both currently operating and future plants.

4. **How will you, as a Commissioner, work to ensure that the agency does not slip into a malaise and that regulatory decisions and actions, whether connected to issues stemming from Fukushima or not, take longer and longer to resolve?**

   During my service as a Commissioner, I have found the NRC to be an organization of dedicated safety professionals who are mindful of the importance of their work to the Nation. Their dedication, coupled with disciplined adherence to NRC's Principles of Good Regulation by both the agency's staff and the Commission itself, will keep our efforts focused.

Senator BOXER. Thank you.

The Honorable George Apostolakis.

How did I do on that one? We met in California so I had a chance to practice that.

Go ahead.

STATEMENT OF HON. GEORGE APOSTOLAKIS, COMMISSIONER, NUCLEAR REGULATORY COMMISSION

Mr. APOSTOLAKIS. Chairman Boxer, Ranking Member Inhofe, Chairman Carper, Ranking Member Barrasso and members of the Committee, good morning. I appreciate the opportunity to appear before you today. My views regarding the way forward with the near-term task force recommendations are summarized as follows.

First, it is important to bear in mind the significant task force conclusion that the current regulatory system has served the commission and the public well, and that a sequence of events like those that occurred in Fukushima is unlikely to occur in the United States.

Second, many people have referred to the events at Fukushima as unthinkable or unforeseen and imply that we should focus on protecting nuclear plants from unimaginable events. However, there is growing evidence that the historical record of tsunamis had not been used properly to determine the design basis of Fukushima Dai-ichi and consequently the protection of the plant was not sufficient.

In addition, the location of safety significant equipment was less than optimal with respect to protection against flooding. The accident was not of extremely low probability. That is, it was not unthinkable or unforeseen. These observations suggest that we should be mindful of striking a proper balance between confirming the correctness of the design basis and expanding the design basis of U.S. plants.

Third, the timely disposition by the commission of the near-term task force recommendations is important. It is also important to do this in an open and transparent manner. Three months should be sufficient time to achieve these objectives.

Fourth, our process for reaching decisions should be methodical and systematic. The Three Mile Island experience is relevant here. As the task force states, "Some of the actions taken by the NRC after TMI were not subjected to a structured review. Subsequently, some of the resulting requirements were found not to be of substantial safety benefit and were removed."

Fifth, with these recommendations in mind, I believe that the commission's deliberations would benefit from an evaluation of the task force recommendations by NRC management, the views of external stakeholders, and an independent evaluation by the Advisory Committee on Reactor Safeguards. These reviews may in fact result in additional or different recommendations.

I will be working with my fellow Commissioners to reach a timely resolution of the lessons learned from Fukushima.

Thank you.

[The prepared statement of Mr. Apostolakis follows:]

Environment and Public Works Committee Hearing
August 2, 2011
Follow-Up Questions for Written Submission

Questions for Commissioner Apostolakis

Questions from Senator Barbara Boxer

1. The Task Force concluded that a sequence of events like what occurred in Japan is unlikely to occur in the United States. Yet, the Task Force still recommended numerous safety improvements for nuclear power facilities around the country. In your view, what is the primary lesson learned from the accident in Japan thus far?

Answer: In my view, the primary lesson learned from the accident in Japan is that we should reevaluate the correctness of the design basis for major natural events on a periodic basis.

2. The Union of Concerned Scientists (UCS) issued a response to the NRC Task Force's report, in which it urged the NRC to modify current emergency planning requirements. UCS urged the NRC to require plants to develop such plans based on a scientific assessment of the populations at risk for each site, rather than artificially limiting plans to areas within the current 10-mile planning zone. Do you agree that the NRC should reevaluate current requirements for emergency preparedness and evacuation plans in light of what happened in Japan?

Answer: Yes. We should reevaluate current requirements for the emergency planning zone (EPZ) using site-specific Level 3 probabilistic risk assessments (PRAs) which, in addition to considering the populations at risk, also take into account potential accident sequences, local geography, and other relevant factors. A Level 3 PRA that is updated periodically would allow for a better informed evaluation of emergency planning using current site-specific conditions.

3. California's two nuclear power plants are located in areas of high seismic activity and I am concerned about their ability to withstand earthquakes. The Task Force has recommended requiring nuclear power plants to confirm their seismic and flooding hazards every 10 years and to address any new and significant information with safety upgrades. Do you agree that nuclear power plants in the United States should periodically re-evaluate seismic and flooding hazards in light of what occurred in Japan?

Answer: Yes. I agree with the Task Force that seismic and flooding hazards should be reevaluated at appropriate intervals throughout the life of the nuclear power plant.

Questions from Senator Thomas R. Carper

1. Can you explain how the NRC uses a mix of voluntary and mandatory regulations to ensure safety? How does the NRC ensure voluntary regulations are being enacted?

Answer: The NRCs regulations provide requirements that are necessary for a finding of reasonable assurance of adequate protection to public health and safety and common defense and security. The NRC does not rely on industry voluntary initiatives to ensure adequate protection. Voluntary initiatives can, however, enhance safety in areas which go beyond the NRC's regulatory requirements. The NRC sometimes looks at voluntary initiatives during our inspections. However, the NRC does not routinely ensure that voluntary initiatives are implemented appropriately.

2. I can see a role for voluntary regulations -they can be quickly implemented without waiting on the federal government. However, they are meaningless if they are never enacted or not sustained over time. I was disappointed to see that when the NRC did a review of the voluntary severe accident management guidelines -very few plants were implementing all of the guidelines. Some plants were implementing very few of the guidelines at all. Can the NRC enforce voluntary programs without codifying them into law? What are the advantages and disadvantages of codifying voluntary programs? Should there be a time period after which all voluntary programs should become regulatory statute?

Answer: Shortly after the accident at Fukushima Daiichi, the NRC issued inspection guidance to look at severe accident mitigation guidelines (SAMGs) at operating plants. These guidelines were put in place in the 1990s and were voluntary industry initiatives. The NRC reviewed the adequacy of these SAMGs and how they've been maintained over the years. Inspections confirmed that every site has SAMGs, but revealed inconsistent implementation, inconsistencies in procedure availability and control, and some issues with training and use of SAMGs in emergency response exercises.

NRC's assurance of adequate protection does not rely on voluntary industry initiatives. The NRC does not enforce compliance with voluntary programs because they are not required for adequate protection. However, some voluntary initiatives could be codified if the NRC determined, based on new information, that they are necessary for adequate protection or they increase safety substantially and are cost justified. The Fukushima accident is certainly prompting the NRC to reconsider the voluntary nature of some industry initiatives.

3. What we do know about the Fukushima is that the Japanese underestimated the risk of that great of a tsunami and earthquake for that facility. I want to be sure we are not underestimating our risks here at home. Please list the last time the NRC evaluated the seismic and flooding hazards for each of the 104 nuclear power plants.

Answer: The NRC evaluated the seismic and flooding hazards for each site during the initial licensing review for each reactor at the site. In the mid to late 1990's, the NRC requested that each licensee identify and report all plant-specific vulnerabilities to severe accidents caused by seismic events; internal fires; and high winds, floods, and other external initiating events. All licensees reviewed the potential for earthquake ground motions beyond the design basis. As a result of this review, several plants made plant modifications to improve protection against these external events.

The NRC is currently in the process of conducting a generic review (i.e., Generic

Issue-199 (GI-199), Implications of Updated Probabilistic Seismic Hazard Estimates in the Central and Eastern U.S. on Existing Plants), to re-assess the resistance of U.S. nuclear plants to earthquakes. This is an ongoing effort and a draft Generic Letter has been developed to move the process into the regulatory assessment stage. The Generic Letter was available for public comment until October 31, 2011. The NRC staff will consider the comments before finalizing the Generic Letter, which the staff expects to issue near the end of this year. The approach outlined in the Generic Letter would have U.S. nuclear power plants perform their analysis within either one or two years, depending on the analysis method used, and deliver their results to the NRC. The agency will then determine whether additional actions are necessary.

In addition, the Commission is considering whether and how to implement seismic and flood hazard reevaluation recommendations resulting from the Near-Term Task Force review of insights from the Fukushima Daiichi accident.

Questions from Senator James M. Inhofe

1. You cited in your opening statement that "there is growing evidence that the historical record of tsunamis had not been used properly to determine the design basis of Fukushima Daiichi and consequently the protection of the plant was not sufficient." You also mentioned that the accident "was not unthinkable or unforeseen." Please describe in more detail the information that informed your conclusion.

Answer: My judgment is based on discussions with technical experts, both within and outside of the U.S., and reports written about the event. This includes the government of Japan's report to the International Atomic Energy Agency, in which it states that "the assumption on the frequency and scale of tsunamis was insufficient." One tsunami expert told me that there were 10 earthquakes in the last 10 years worldwide of magnitude 8.4 or less on the Richter scale which had generated tsunamis higher than 10 meters. It does not appear that this information was taken into account. Furthermore, the design basis did not include data on a major tsunami that occurred more than 1000 years earlier. In a New York Times article (March 26, 2011), a tsunami expert referred to Japan's underestimation of the tsunami risk as "a cascade of stupid errors".

In addition, critical equipment at Fukushima Daiichi was located in low elevations of the plant. A risk assessment for flooding would have revealed these vulnerabilities. In light of the above, I concluded that the accident was not unthinkable or unforeseen.

2. The Chairman has repeatedly commented that failure to implement the task force recommendations may delay new plant applications. Do you agree with that assessment?

Answer: The Commission has already decided to implement several of the Task Force recommendations. At this point, I do not see the necessity for delay. New reactor license applications are judged against current regulatory requirements. These licenses could be issued, if approved by the Commission, without the need for any new license conditions associated with the Fukushima Near-Term Task Force recommendations. If the Commission approves issuance of these licenses, it can use existing regulatory approaches to implement those approved recommendations applicable to new reactor licensees just as it will for operating reactor licensees. This approach provides adequate mechanisms to address regulatory changes that the Commission determines are necessary. However, the Commission is currently deliberating on aspects of the Task Force recommendations as well as the issuance of the first new reactor licenses.

3. How will you, as a commissioner, work to ensure that the agency does not slip into a malaise and that regulatory decisions and actions, whether connected to issues stemming from Fukushima or not, take longer and longer to resolve?

Answer: As an individual Commissioner, I will continue to do my part and work with my colleagues to ensure that timely decisions are made. If there is a potential delay associated with an agency decision, I will scrutinize the cause of the delay and only support it when there are compelling reasons for it.

Senator BOXER. Thank you very much.

And now we look to Commission member William Magwood.

STATEMENT OF HON. WILLIAM D. MAGWOOD, IV, COMMISSIONER, NUCLEAR REGULATORY COMMISSION

Mr. MAGWOOD. Thank you. Thank you, Chairman Boxer, Ranking Member Inhofe, Chairman Carper, Ranking Member Barrasso. I appreciate the opportunity to appear before you today.

Soon after the seriousness of the events at Fukushima became evident, the commission created a task force to study this and apply any lessons learned. After nearly 4 months of work, this task force has provided us with the recommendations we have discussed this morning.

I congratulate the six-person team for its impressive work and I also want to just sort of point out that Dr. Charles Miller, who chaired the task force, is with us in the audience today somewhere back there, and I wanted to just make mention of the fact that I think tomorrow is his retirement date. So this is his opportunity to observe his work.

Senator CARPER. Can we ask him to raise his hand?

Thanks for your service.

Mr. MAGWOOD. Thank you, Charlie.

Nevertheless, while the task force found that U.S. plants are safe and they say that quite clearly. Their conclusion that the U.S. plants are safe is not a license for complacency. There are very clearly some important lessons learned from Fukushima that can be used to further improve our regulatory framework, and the task force has made the 12 recommendations we have spoken of this morning.

Obviously, the task force was limited in its time and scope and its ability to reach out to stakeholders and the Advisory Committee on Reactor Safeguards. Fortunately, since the task force found no imminent risk to public health or safety, we have the opportunity to apply our resources and processes to best effect and deal with issues such as the potassium iodide and other issues which were not covered by the task force in open and transparent manner.

We must work quickly and effectively to engage our stakeholders in consideration of the task force's recommendations, as well as consideration of approaches which the task force did not have time or resources to analyze.

I also believe that while there are many who believe that we should move very quickly on every recommendations, I think what Senator Carper said this morning is actually quite apropos. There are some recommendations which I believe can be implemented almost right away, and I think the votes of the commission so far have indicated that that is possible.

There are others that may take some more time, and I think we should take that time to do this the right way and not repeat the mistakes of the post-Three Mile Island era.

So with that, I look forward to your questions.

Thank you.

[The prepared statement of Mr. Magwood follows:]

Questions for Commissioner Magwood
August 2, 2011
Follow-up Questions for Written Submission

Senator Barbara Boxer

1. **The Task Force concluded that a sequence of events like what occurred in Japan is unlikely to occur in the United States. Yet, the Task Force still recommended numerous safety improvements for nuclear power facilities around the country. In your view, what is the primary lesson learned from the accident in Japan thus far?**

   In my view, the primary lesson we must learn from the accident in Japan is that we must be prepared to deal with the unexpected. We must assure that if an unlikely or unforeseen event occurs that challenges the safety of a nuclear plant, we have appropriate mitigating measures in place that will allow plant operators to recover from the initiating event and prevent damage to the core and releases that could threaten the environment and the public. For example, we need to be prepared for the loss of on-site and off-site electric power. We also need to review preparedness at multi-unit sites. I believe a central aspect of our regulatory response to Fukushima will be to assure that licensees have the equipment, procedures, and training to recover from the unexpected.

2. **The Union of Concerned Scientists (UCS) issued a response to the NRC Task Force's report, in which it urged the NRC to modify current emergency planning requirements. UCS urged the NRC to require plants to develop such plans based on a scientific assessment of the populations at risk for each site, rather than artificially limiting plans to areas within the current 10-mile planning zone. Do you agree that the NRC should re-evaluate current requirements for emergency preparedness and evacuation plans in light of what happened in Japan?**

   I believe the ten-mile emergency planning zone is still an appropriate basis for emergency preparedness. Fukushima demonstrated the significant amount of time which authorities have to take appropriate protective measures when responding to an emergency situation occurring at a U.S.-style light water reactor. Still, it is appropriate to examine all lessons from the Fukushima event. The NRC staff has recommended a longer-term effort to review current emergency planning requirements, including the 10 mile emergency planning zone, and I support this initiative.

3. **California's two nuclear power plants are located in areas of high seismic activity and I am concerned about their ability to withstand earthquakes. The Task Force has recommended requiring nuclear power plants to confirm their seismic and flooding hazards every 10 years and to address any new and significant information with safety upgrades. Do you agree that nuclear power plants in the United States should periodically re-evaluate seismic and flooding hazards in light of what occurred in Japan?**

I recently visited California's nuclear power plants and learned a great deal about the operation of Diablo Canyon Power Plant and the San Onofre Nuclear Generating Station (SONGS) and the external hazards against which we must protect.

As a part of its effort to complete an application to renew the operating license for Diablo Canyon, Pacific Gas and Electric (PG&E) has conducted a complete safety evaluation report. The NRC has made clear that it will not finalize a decision on this license renewal application until the company completes 3-D seismic studies forced on the nearby Shoreline Fault which was discovered in 2008. PG&E must also obtain a coastal consistency certification before its application can be approved. Similarly, Southern California Edison (SCE) has proposed a multimillion dollar study that would use a new technology including 3-D reflecting mapping offshore that would be used to detect hidden earthquake faults to better assess seismic conditions near SONGS.

I believe these efforts are appropriate measures to address uncertainties associated with the seismic risks facing these facilities. This work responds to new information and applies new technology. In these specific cases and as a general matter, I believe it would place the public at greater risk to wait ten years to respond to new information regarding seismic, flooding or any other external hazard. The Commission currently has before it staff's recommendation to have licensees reevaluate the seismic and flooding hazards at their sites against current NRC requirements and guidance, and if necessary, update the design basis and structures, systems and components important to safety and to protect against the updated hazards. The Commission has approved a staff recommendation to interact with stakeholders and develop information requests under 10 CFR 50.54(f). As a result, we will ask all nuclear plant licensees to reevaluate site-specific seismic and flooding hazards, perform seismic and flood protection walk-downs and identify actions that have been taken or are planned to address plant specific issues associated with the hazards or identified during the plant walk downs.

I believe that this approach is the best way to assure licensees understand the seismic and flooding risks faced by their plants and respond appropriately to address them—without waiting for a decadal review.

Senator Thomas R. Carper

1. **Can you explain how the NRC uses a mix of voluntary and mandatory regulations to ensure safety? How does the NRC ensure voluntary regulations are being enacted?**

   It is my belief that if something is of safety significance, it is best to make it part of our regulatory requirements. However, there are some areas of interest which involve safety risks of relatively low significance. NRC's ability under existing law to regulate areas that do not impact human health is very limited. In such cases, voluntary efforts may be appropriate and may be implemented more quickly.

   Industry's Groundwater Protection Initiative is a prime example of a voluntary initiative that advances the protection of public health and addresses public concerns. The NRC has fostered an environment which encourages industry to take actions of this nature and continually monitors and periodically assesses the effectiveness of these initiatives. If the agency finds that voluntary efforts are not being conducted in a committed fashion, this information will be presented to the Commission, and the Commission can consider other measures.

2. **I can see a role for voluntary regulations – they can be quickly implemented without waiting on the federal government. However, they are meaningless if they are never enacted or not sustained over time. I was disappointed to see that when the NRC did a review of the voluntary severe accident management guidelines very few plants were implementing all of the guidelines. Some plants were implementing very few of the guidelines at all. Can the NRC enforce voluntary programs without codifying them into law? What are the advantages and disadvantages of codifying voluntary programs? Should there be a time period after which all voluntary programs should become regulatory statute?**

   I believe the ongoing evaluation of performance of voluntary initiatives is preferable to a broadly applied time limit. The NRC assesses all voluntary initiatives and if they are found to not have widespread implementation or that the voluntary efforts are not being conducted in an effective fashion, then the issue can be revisited. If the Commission finds that regulatory action is needed, it can make a voluntary initiative a mandatory requirement through the issuance of an order; initiation of a rulemaking; or by incorporating the program into the licensee's operating license as a license condition.

   The matter of severe accidents management guidelines (SAMGs) is an important example. The accidents at Fukushima demonstrated the importance of having plant operators who are well prepared and well supported by technically sound and practical procedures and guidelines. It is clear that a planned approach to command and control during decision making during an emergency is vital. SAMGs are an important aspect to

emergency response capability. Following the Fukushima accident the NRC issued Temporary Instruction 2515/183 to its resident inspectors to ensure licensee compliance with existing requirements related to SAMGs and extensive damage mitigation guidelines and to collect information on the readiness of these measures for use under various external challenges. As you noted in your question, our inspectors observed inconsistent implementation of SAMGs and attributed it to the voluntary nature of this initiative.

As a result, the Commission is currently considering a staff recommendation to require licensees to strengthen and integrate emergency operating procedures, severe accident management guidelines, and extensive damage mitigation guidelines. Our evaluation of this effort is now underway and I anticipate this work will result in a more aggressive NRC stance with regard to these procedures.

3. **What we do know about the Fukushima is that the Japanese underestimated the risk of that great of a tsunami and earthquake for that facility. I want to be sure we are not underestimating our risks here at home. Please list the last time the NRC evaluated the seismic and flooding hazards for each of the 104 nuclear power plants.**

The NRC requires that safety-significant structures, systems, and components at U.S. nuclear power plants be designed to take into account even rare and extreme seismic and tsunami events. All 104 U.S. nuclear power plants are built to withstand external hazards, including earthquakes, flooding, and tsunamis, as appropriate. Each plant's capability to withstand external hazards relevant to its site is reviewed by the NRC during its initial licensing.

The NRC has also made substantial efforts over time to ensure the vulnerabilities from both internal and external hazards are considered and mitigated in the current design and licensing basis of its regulated facilities. The NRC routinely inspects each licensee's policies and procedures associated with responding to seismic and flooding hazards. Additionally NRC inspects the licensee's structures, systems, and components used to mitigate the hazards. The NRC has also conducted two reviews of its regulated facilities over the last 25 years to ensure that they have included both internal and external hazards in their current plant design and licensing basis. These reviews are as follows:

(1) In 1988, the NRC's Generic Letter No. 88-20, Individual Plant Examination for Severe Accident Vulnerabilities," requested plant owners to perform a systematic evaluation of plant-specific vulnerabilities and report the results to the Commission.

(2) In the mid to late 1990s, the NRC staff reviewed the potential for ground motions beyond the design basis as part of the Individual Plant Examination of External Events. From this review, the staff determined that seismic designs of operating nuclear plants in the U.S. have adequate safety margins for withstanding earthquakes.

The NRC was preparing to perform a generic review of seismic hazards for existing plants before the Fukushima event occurred. This effort, knows as Generic Issue-199, "Implications of Updated Probabilistic Seismic Estimates in Central and Eastern United States on Existing Plants," will be incorporated into the NRC effort to re-evaluate the seismic hazards at U.S. nuclear plants in light of the Fukushima event, as outlined in SECY-11-0137, "Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned."

Through these substantial efforts, the NRC has ensured that the risk associated with seismic and flooding hazards is not underestimated at nuclear power plants in the U.S. The NRC remains convinced that U.S. nuclear power plants are designed and operated in a manner that protects public health and safety.

Senator James M. Inhofe

1. **You have mentioned that the task force didn't consider some issues in its report and cite the use of potassium iodide as one example. What other issues did the task force overlook that you believe would benefit from a more methodical review?**

While the Task Force was staffed with highly-experienced experts, it was a very small group that, by necessity, was allowed a very short period of time in which to complete its work. The report the Task Force produced is insightful and impressive, but I do believe there are areas not covered by the report that require further considerations. As you note, I believe that NRC should review our approach to the use of potassium iodide (KI) in the aftermath of a multi-unit accident. I am hopeful that we will obtain actionable information from Japan regarding that nation's experience with KI distribution in the days after Fukushima.

I also believe that Fukushima demonstrated the vital importance of ensuring access to ultimate heat sinks. Ultimate heat sinks are sources of water necessary to operate, shut down, and cool down a nuclear plant safely following an accident. Water for ultimate heat sinks is frequently supplied directly from large-surface water bodies, such as rivers, lakes, or oceans. If those sources of water were to become unavailable as a function of an external event such as an earthquake or tsunami, any efforts to mitigate the consequences of an accident would be hobbled.

Senator BOXER. Thank you.
Mr. Ostendorff, welcome.

STATEMENT OF HON. WILLIAM C. OSTENDORFF, COMMISSIONER, NUCLEAR REGULATORY COMMISSION

Mr. OSTENDORFF. Madam Chairman, Ranking Member Inhofe, Chairman Carper, Ranking Member Barrasso, Members of the Committee, thank you for the chance to be before you today.

I highly commend the NRC's near-term task force for its dedication, thoughtfulness and professionalism in conducting its review. Given a very short period of time, the task force has provided a very significant product that will serve us well.

Before forming my position on the task force report, I carefully studied the report. I met with the task force in a public meeting. I sought input from NRC staff. And I listened to the views of my colleagues at this table. I cast my vote on the task force report last Wednesday and made that vote publicly available.

Serving, in my view, as the anchor for this report are findings related to the safety of commercial reactors in the United States. The task force noted that the current regulatory approach has served the commission and the public well, and the continued operation and continued licensing activities do not pose imminent risk to public health and safety.

As I stated at the commission's July 19th public meeting on the task force report, while I support thoughtful consideration of potential safety enhancements in a systematic and holistic manner, at the same time I do not believe that our existing regulatory framework is broken.

My vote is centered on three key principles. First, the need to ensure that we have an integrated, prioritized approach based on recommendations by the NRC's Executive Director for Operations. The failure to have such an approach was a key lesson learned from NRC's response to the events at Three Mile Island and was stated by the EDO, Bill Borchardt, who is here today as a concern that he had going forward with Fukushima when we had our public meeting March 21st.

Not all the 12 task force recommendations that have 35 subparts are equal, neither in safety enhancement or urgency perspective.

Second, some actions should be taken sooner than others. My vote cast last week supports the EDO coming back within 30 days with a list of recommendations warranting short-term actions. I specifically called out in my vote from last week six discrete actions that I think should happen now. There are perhaps others. I look forward to hearing from the EDO as to what those recommendations might be from an integrated prioritization standpoint.

Third and finally, I join with my colleagues at the table in supporting the full engagement by our stakeholders. That is absolutely critical.

I appreciate the Committee's oversight and interest in this area and I look forward to your questions.

Thank you.

[The prepared statement of Mr. Ostendorff follows:]

ENCLOSURE

Environment and Public Works Committee Hearing
August 2, 2011
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
Senator Barbara Boxer

1. The Task Force concluded that a sequence of events like what occurred in Japan is unlikely to occur in the United States. Yet, the Task Force still recommended numerous safety improvements for nuclear power facilities around the country. In your view, what is the primary lesson learned from the accident in Japan thus far?

Answer

In my view, the primary lesson learned from the accident in Japan thus far is that nuclear power plants must have sufficient capability to cope with an extended loss of all alternating current power or what is referred to as a "station blackout." In my vote on the Near Term Task Force report (SECY-11-0093), I expressed support for the initiation of rulemaking to strengthen station blackout mitigation capability at nuclear power plants. Moreover, in my vote on the staff's recommended actions to be taken without delay (SECY-11-0124), I proposed to designate the station blackout rulemaking as a high-priority rulemaking to be completed within 24 months of the date of the associated Staff Requirements Memorandum (SRM) for SECY-11-0124. In the final SRM, the Commission directed the staff to designate the rulemaking as a high-priority with a goal of completion within 24 to 30 months of October 18, 2011.

In addition to dealing with an extended station blackout event, I also took away other important lessons learned. These lessons include the importance of reliable venting systems for certain boiling water reactor containments; the importance of severe accident management procedures; assessment of protection from external hazards such as seismic and flooding; the value of having reliable spent fuel pool instrumentation; and emergency preparedness for multi-unit events.

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Questions for Commissioner Ostendorff
Senator Barbara Boxer

2. The Union of Concerned Scientists (UCS) issued a response to the NRC Task Force's report, in which it urged the NRC to modify current emergency planning requirements. UCS urged the NRC to require plants to develop such plans based on a scientific assessment of the populations at risk for each site, rather than artificially limiting plans to areas within the current 10-mile planning zone. Do you agree that the NRC should reevaluate current requirements for emergency preparedness and evacuation plans in light of what happened in Japan?

Answer

In SECY-11-0137, "Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned," the NRC staff identified emergency planning zone (EPZ) size as an additional issue with a nexus to the Fukushima accident that may warrant further regulatory action. While the NRC staff's assessment of this issue is incomplete, the staff has judged that this issue, among others, warrants further consideration and potential prioritization. A determination of whether any regulatory actions are necessary will be made after the staff completes further evaluation of the issue. As this further evaluation is conducted, I believe that the existing framework for a 10-mile EPZ along with the flexibility to expand the EPZ, if circumstances warrant, will continue to provide for the protection of the public during a nuclear accident.

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Questions for Commissioner Ostendorff
Senator Barbara Boxer

3. California's two nuclear power plants are located in areas of high seismic activity and I am concerned about their ability to withstand earthquakes. The Task Force has recommended requiring nuclear power plants to confirm their seismic and flooding hazards every 10 years and to address any new and significant information with safety upgrades. Do you agree that nuclear power plants in the United States should periodically re-evaluate seismic and flooding hazards in light of what occurred in Japan?

Answer

I agree that nuclear power plants in the United States should re-evaluate the safety implications of hazards, such as seismic and flooding, when new and significant information becomes available. In this regard, I voted to support the NRC staff's recommendation in SECY-11-0124, "Recommended Actions to be Taken Without Delay from the Near Term Task Force Report," to initiate regulatory activities aimed at conducting re-evaluations and walkdowns of site-specific seismic and flooding hazards. I believe that what we learn from these near-term regulatory activities will help inform whether the NRC should require a periodic re-evaluation, such as the 10-year confirmation of seismic and flooding hazards recommended by the Task Force.

As an aside, I had the opportunity with Commissioner Magwood to visit California's two nuclear power plants—San Onofre on October 25 and Diablo Canyon on October 26 (Dr. Horner from your staff joined us). During both plant visits, we had significant discussions on seismic hazards analysis.

ENCLOSURE

Environment and Public Works Committee Hearing
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Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
Senator Thomas R. Carper

1. Can you explain how the NRC uses a mix of voluntary and mandatory regulations to ensure safety? How does the NRC ensure voluntary regulations are being enacted?

Answer

The NRC does not rely on voluntary measures to ensure safety; by statute, the NRC is required to put in place those regulations needed to ensure adequate protection of public health and safety. For safety, technical, or operational issues that do not rise to the level of adequate protection, the nuclear industry could voluntarily develop and adopt initiatives to address a particular issue.

Regulatory commitments and voluntary programs are useful since they can often be implemented more quickly than the development of formal NRC requirements. Furthermore, they typically enable more flexibility to address the given situation. The manner in which a regulatory commitment or voluntary program is treated by the licensee and by the NRC can vary, depending on the nature of the regulatory commitment or voluntary program and its relation to a regulatory requirement. For example, the NRC may use a licensee's regulatory commitments to help decide if further regulatory actions need to be taken. Under such circumstances, the NRC would typically perform an inspection to determine if the licensee is implementing the regulatory commitment, if the regulatory commitment is being managed through the licensee's commitment tracking system, and whether the regulatory commitment should be placed into a controlled document such as the final safety analysis report. The NRC staff currently performs periodic audits of licensee commitments at operating nuclear power plants on a triennial basis.

Alternatively, a licensee's implementation of a voluntary program may stem from the NRC encouraging the licensee to take additional actions that, while not necessary to ensure adequate protection, provide added margins with respect to the overall safety of the facility. Under this scenario, the NRC may choose to inspect the voluntary program as part of its reactor oversight program depending on the specific circumstance.

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Questions for Commissioner Ostendorff
Senator Thomas R. Carper

2. I can see a role for voluntary regulations - they can be quickly implemented without waiting on the federal government. However, they are meaningless if they are never enacted or not sustained over time. I was disappointed to see that when the NRC did a review of the voluntary severe accident management guidelines - very few plants were implementing all of the guidelines. Some plants were implementing very few of the guidelines at all. Can the NRC enforce voluntary programs without codifying them into law? What are the advantages and disadvantages of codifying voluntary programs? Should there be a time period after which all voluntary programs should become regulatory statute?

Answer

The NRC does not routinely inspect the implementation of voluntary industry initiatives, and cannot enforce them. Further, regulatory commitments made by licensees are generally not enforceable NRC requirements.

Voluntary programs can be advantageous in allowing the NRC to focus resources on those issues of the highest safety importance, while allowing issues of low safety or risk importance to be addressed through voluntary programs. The disadvantages of a voluntary programs is that if the issue of concern has a nexus to safety and the NRC determined that the issue was not being sufficiently addressed, we would be limited in our ability to take effective action because of the lack of enforceability.

If the NRC concludes that a regulatory requirement is needed to address a particular safety, technical, or operational issue of concern, then the NRC would take action in one of several ways including: 1) issuing an order, 2) initiating rulemaking, or 3) incorporating a licensee's commitment or voluntary program into its operating license as a license condition

There is no time period associated with putting in place regulations for an issue that is being addressed through a voluntary industry initiative. Rather, the decision to put in place regulations would be dependent upon the safety significance of the issue.

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Questions for Commissioner Ostendorff
Senator Thomas R. Carper

3. What we do know about the Fukushima is that the Japanese underestimated the risk of that great of a tsunami and earthquake for that facility. I want to be sure we are not underestimating our risks here at home. Please list the last time the NRC evaluated the seismic and flooding hazards for each of the 104 nuclear power plants.

Answer

The NRC takes steps to ensure that vulnerabilities to both internal and external hazards are considered and mitigated in the current design and licensing basis of its regulated facilities. For example, the NRC requires that safety-significant structures, systems, and components at U.S. nuclear power plants be designed for protection against natural phenomena, including seismic and tsunami events. All 104 U.S. nuclear power plants are built to withstand such external hazards, and each plant's capability to withstand external hazards relevant to its site characteristics is reviewed by the NRC during its initial licensing.

In addition, the NRC routinely inspects licensee procedures and systems, structures, and components associated with mitigating the consequences of internal and external hazards. The NRC has also conducted two reviews of its regulated facilities over the last 25 years to ensure that they have included both internal and external hazards in their current plant design and licensing basis. These reviews are as follows:

(1) In 1988, the NRC's Generic Letter No. 88-20, "Individual Plant Examination for Severe Accident Vulnerabilities," requested plant owners to perform a systematic evaluation of plant-specific vulnerabilities and report the results to the Commission.

(2) In the mid to late 1990s, the NRC staff reviewed the potential for ground motions beyond the design basis as part of the Individual Plant Examination of External Events. From this review, the staff determined that seismic designs of operating nuclear plants in the U.S. have adequate safety margins for withstanding earthquakes.

The NRC was preparing to perform a generic review of seismic hazards for existing plants before the Fukushima event occurred. This effort, knows as Generic Issue-199, "Implications of Updated Probabilistic Seismic Estimates in Central and Eastern United States on Existing Plants," will be considered in the NRC's effort to re-evaluate the seismic hazards at U.S. nuclear plants in light of the Fukushima event, as outlined in SECY-11-0137, "Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned."

Through these efforts, the NRC can help ensure that the risk associated with seismic and flooding hazards is not underestimated at nuclear power plants in the U.S.

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Environment and Public Works Committee Hearing
August 2, 2011
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
Senator James M. Inhofe

1. The Chairman has repeatedly commented that failure to implement the task force recommendations may delay new plant applications. Do you agree with that assessment?

Answer

No, I do not agree with that assessment.

In a September 9, 2011 Order (CLI-11-05), the Commission declined to suspend adjudicatory, licensing, and rulemaking activities in light of the recent events at the Fukushima Daiichi nuclear power plant. As stated in the Order, the Commission noted that "whether we adopt the Task Force recommendations or require more, or different, actions associated with certified designs or COL applications, we have the authority to ensure that certified designs and combined licenses include appropriate Commission-directed changes before operation."

We further noted that "we find no imminent risk to public health and safety if we allow our regulatory processes to continue. Instead of finding obstacles to fair and efficient decision-making, we see benefits from allowing our processes to continue so that issues unrelated to the Task Force's review can be resolved. We have well-established processes for imposing any new requirements necessary to protect public health and safety and the common defense and security. Moving forward with our decisions and proceedings will have no effect on the NRC's ability to implement necessary rule or policy changes that might come out of our review of the Fukushima Daiichi events."

As I described in my August 18, 2011 responses to your follow-up questions from the June 16, 2011 hearing, the Commission can apply lessons learned from Japan to new plant activities in a variety of different ways using existing regulatory processes.

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Environment and Public Works Committee Hearing
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Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
Senator James M. Inhofe

2. How will you, as a commissioner, work to ensure that the agency does not slip into a malaise and that regulatory decisions and actions, whether connected to issues stemming from Fukushima or not, take longer and longer to resolve?

Answer

I believe in applying the NRC's Principles of Good Regulation in carrying out my responsibilities as an NRC Commissioner. In my view, three principles—efficiency, clarity, and openness—are of particular importance to avoid the malaise you have expressed concern over. In my tenure, I believe that my decisions have been made without undue delay and have sought to promote efficiency, clarity, and openness in the NRC's regulatory activities. For example, I have supported expedited rulemaking where it has been appropriate for the circumstance. I also strive to ensure that there is clarity of direction from the Commission to the NRC staff, clarity of our regulations to those that must implement them, and clarity of our communications with our external stakeholders. Lastly, I have undertaken initiatives to enhance the NRC's engagement with external stakeholders to best inform our regulatory decisions.

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Environment and Public Works Committee Hearing
August 2, 2011
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
Senator James M. Inhofe

3. You commented in the hearing about the NRC's lack of understanding of whether or not the Fukushima operators actually used their hardened vents. At this time, do you believe the NRC knows enough about the Fukushima hardened vents to fix it right the first time?

Answer

I believe that while all of the details of what happened with the hardened vents during the Fukushima accident are not yet fully understood, we do know enough to recommend a requirement for reliable hardened vents. In particular, several reactor units at the Fukushima Daiichi site experienced containment pressure increases during the accident that substantially exceeded the design pressure. I agree with the NRC's Near Term Task Force's evaluation that having a reliable hardened vent system would significantly enhance the capability to mitigate serious beyond design basis accidents. As such, I have voted to support the development of regulatory requirements through orders for reliable hardened vents at certain boiling water reactor facilities.

Senator BOXER. Thank you very much.

Each of us will have 5 minutes.

We are not dealing here with safety issues that are relatively straightforward like seatbelts. We know it is essential people buckle up. We know they save lives. What we are dealing with here is potentially fatal doses of radiation if you don't do your job right and we don't do our jobs right.

And today, the New York Times had a story here, Fatal Radiation Level Found At Japanese Plant. They said the operator at Tokyo Electric Power said that workers on Monday afternoon found an area near reactors numbers one and two where radiation levels exceeded their measuring device's maximum reading of 10 sieverts per hour, a fatal dose for humans.

So when I hear colleagues call, and this is my interpretation of what they said, not far off, recommendations for safety, more Washington red tape, I believe that is what the Ranking Member said, more Washington red tape. I can tell the people in Japan would have got down on their knees and prayed God that they had more safety measures in place.

So I want to ask some questions here. The task force recommends requiring hardened vent designed in Mark I and Mark II reactors. Now, the reason is that what happened in Japan is the fuel in the reactors of units one, two and three became partially uncovered which led to a buildup of hydrogen gas. Japanese tried to vent the gas, but because the vents were not working, explosions occurred in all three units. Those units were Mark I reactors, and we know some of the Mark II reactors have made some safety improvements.

But the task force recommends requiring hardened vent designs in Mark I and Mark II reactors. It is important to note only three reactors in America have installed hardened vents. There are five remaining reactors who have. Now, why do we have to wait before we implement that recommendation?

So I am going to ask each of you: Do you think we ought to move on that recommendation to harden, to move forward with this recommendation of the hardened vent designs?

I just want a yes or know or don't know.

Mr. JACZKO. Yes, I think that is a fine recommendation.

Senator BOXER. OK, I don't want any editorial comment, yes or no or don't know.

Ms. SVINICKI. I don't know at this time.

Senator BOXER. OK. Next?

Mr. APOSTOLAKIS. Sounds reasonable.

Senator BOXER. Yes.

Mr. MAGWOOD. I can't answer at this point.

Senator BOXER. OK.

Mr. OSTENDORFF. I support assessing our venting capability and accessibility. The task force report noted that they did not have a clear understanding of whether the operators were able to actually operate the vents. So there is more information to be gleaned here.

Senator BOXER. I take it as a no.

It is not good news from this commission. Can I ask each of you, what is your purpose that when you became a commission, what was your highest duty, in a word?

Mr. JACZKO. Public health and safety protection.
Senator BOXER. Yes.
Ms. SVINICKI. The safety and security of nuclear material.
Senator BOXER. Yes.
Mr. APOSTOLAKIS. Public health and safety.
Mr. MAGWOOD. Protect health and safety.
Mr. OSTENDORFF. Public health and safety.
Senator BOXER. Good. Well, then I would like you to consider looking at what happened in Japan and looking at the similarities that we see in some of our plants and move on it.

And let me tell you why I am concerned. After 9/11, the NRC took seemingly decisive action, I want you to listen to this. I hope the public is listening to this. You ordered U.S. nuclear power plants to take a series of improved security measures because we worried about a terrorist attack. And in my home State, they were handing out iodine pills. That is how worried they were about it because we had millions of people that live within 50 miles of power plants.

The NRC later codified those orders in regulations. You know when? With compliance required by March 31st, 2010, from 2001 to 2010.

Now, I want assurances from each of you that you will not allow that to happen. And I want to hear from you as to whether or not you believe we can move on these recommendations and put them in place within a year.

Mr. JACZKO. Yes, I believe we can move on them within 90 days and have full implementation with potentially long-term recommendations in 5 years.

Senator BOXER. OK. So let's ask 90 days if we can move on these, most of these recommendations and put them in place in 90 days. There is a yes from the Chairman.

Yes.

Ms. SVINICKI. I don't believe that all can be acted on in 90 days.
Senator BOXER. How many? How many do you think could?
Ms. SVINICKI. I am not certain. I have proposed that we receive an evaluation.
Senator BOXER. So you don't know.
Next.
I am sorry. My time is over. Go ahead.
Mr. APOSTOLAKIS. I agree with the Chairman that we should disposition all of them within 90 days.
Senator BOXER. Excellent.
Sir.
Mr. MAGWOOD. I certainly think some of them could be dispositioned within 90 days. It is hard to say that all of them could, but some of them certainly could.
Senator BOXER. Thank you.
Sir.
Mr. OSTENDORFF. I agree with Commissioner Magwood.
Senator BOXER. Thank you.
OK. My time is up.
Senator.
Senator INHOFE. Thank you, Madam Chairman.

You might recall when we had our June meeting, I had an Armed Services commitment that kept me from being here, so I asked Senator Barrasso if he would ask Chairman Jaczko to provide a full account of the actions he took while exercising his emergency authority as provided in Section 3 of the NRC's reorganization plan of 1980. To date, I have not received such a report.

Section 3 states, "Following the conclusion of the emergency, the Chairman shall render a complete and timely report to the commission on the actions taken during that emergency." Let me start by asking each one of you, except for Chairman Jaczko, the question: Has Chairman Jaczko provided such a report?

Let's start with you.

Ms. SVINICKI. I have not received a report.

Senator INHOFE. You have not.

Mr. APOSTOLAKIS. I have not.

Mr. MAGWOOD. I have never seen a report.

Mr. OSTENDORFF. I have not.

Senator INHOFE. The second thing I would ask you is: Has he informed you that he has ceased using his emergency authority?

Ms. SVINICKI. He has not informed me of that.

Mr. APOSTOLAKIS. He has not.

Mr. MAGWOOD. He has not.

Mr. OSTENDORFF. He has not.

Senator INHOFE. OK. Then I would have to assume that he is still using the emergency. You know, this is kind of very confusing.

Mr. JACZKO. Senator Inhofe, would you like a response?

Senator INHOFE. Not yet.

Well, if you want to extend my time, that is fine. Go ahead.

Senator BOXER. Sure, I will extend your time.

Senator INHOFE. All right.

Mr. JACZKO. My colleagues have all been informed.

Senator INHOFE. It might be better if I finish then he can.

Senator BOXER. Fair enough.

Senator INHOFE. All right. So I have to assume that he is still using, I mean since they haven't received, and I do want to do this because I think it needs to be in the record. None of us were around at that time, but in 1980 when this emergency provision was passed by law, and it was Toby Moffett. He was a Democratic Congressman from Connecticut.

And I am going to read this because I think it is important to have this in the record. This is from over 30 years ago: "There will be two situations in the future, those where the Chairman is in basic agreement with the majority and those where he or she is not. In those cases where the Chairman has a majority of Commissioners with him or her, it is obvious that the Chairman will not need the extraordinary powers tucked away in this plan to work his or her will. The Chairman and the commission can move in unison toward their chosen regulatory policy."

"But what about the other situation, where the Chairman is in the minority, regardless of party affiliation, within the commission, when the majority of the commissioners oppose the Chairman? Isn't it equally obvious that if will be at that moment that these special powers will be most appealing to the Chairman? Isn't it clear that if these powers are ever to be needed and utilized at all,

it is precisely by the Chairman bent on going against a majority of the commissioners. And if that be the case, is this plan not clearly constructed to gut the commission form of regulation and would it not be subject to the basest sort of partisan political manipulation?"

That was over 30 years ago. And I would just have to say, before you make your comments, Chairman Jaczko, I would like to get a commitment from you that you will respect the will of the commission majority on this report and all other issues and that you will not attempt to act unilaterally to implement any of these task force recommendations.

Do you feel comfortable making that commitment here in this hearing?

Mr. JACZKO. Of course, everything I do I do consistent with that.

Senator INHOFE. All right.

Mr. JACZKO. With regard to the emergency powers, the commissioners personally have been briefed by me on ths status of our situation. We no longer have our emergency operation center activated, which is a clear signal that there would be no emergency powers.

Senator INHOFE. But Chairman Jaczko, that is not what they said. They said they have not been notified by you.

Mr. JACZKO. Which is a true statement. But for one to infer that they are not aware of the status of the agency and whether or not, as I believe you indicated, you were therefore assuming that I am continuing to use emergency powers, I don't believe that that is a fair assumption. The commission is fully aware. Their staff is briefed on a weekly basis on our response activities related to Japan. They were provided situation reports throughout the entire activity of everything that was going on.

Moreover, they have received a report that you have all received, the task force report which summarizes and looks at the actions that were taken following the Fukushima incident.

So to somehow infer that the commission is being kept in the dark about what is going on at the agency is simply not true. They have been receiving multiple briefings, many briefings, including public commission meetings.

Senator INHOFE. So all four of them were not telling the truth when they answered the question, have they received a report.

Mr. JACZKO. I simply can't speak for them, but they certainly have received many reports about what we have done following Fukushima, including the report that you see in front of you. If that is not a report summarizing actions and recommendations going forward, I don't know what would be. And that is one of the clear requirements of the report in the statute. So their response I cannot explain.

Senator INHOFE. Well, I think I can.

Thank you, Madam Chairman.

Senator BOXER. Thank you very much.

OK. How about a smile from everybody here. Can you do that? Not quite.

Senator.

Senator CARPER. We don't always smile either up here.

Senator BOXER. We try to. The Chairman and I do.

Senator INHOFE. We do.

Senator BOXER. We do.

Senator CARPER. I am sitting here listening to this and I am reminded of something my mother used to say with respect to moving along expeditiously on these recommendations or not. My mother used to say, haste makes waste. My father, on the other hand, would say that work expands to fill the amount of time we allocate to a job. And so I had like one parent pushing on the accelerator and one parent tapping on the brakes, which is not a bad combination.

It sounds to me like that is a little bit like what we want to do here, or what the commission thinks we ought to do here. In some cases, some of the recommendations we can push on the accelerator, and with some others we can tap on the brakes.

I think one of the things I like to do around here is try to encourage consensus across the aisle, and I am going to try and see if we can get some consensus here with respect to some of these recommendations.

Mr. Magwood, you mentioned that you thought there were some of these recommendations that could be implemented pretty much right away, and there are others that would take some time. Would you mention a couple of the ones that fall into the implement right away category for us please?

Mr. MAGWOOD. Well, I have generally tried not to point out specific recommendations because I would like to let the process work its way. But just to anticipate, a clear example I think are what we call the walk down inspections to confirm that the plants are prepared to deal with a flood and seismic events. I think that is an obvious one that can be done very quickly.

Commissioner Ostendorff in his vote highlighted I think about a half dozen. I am in general agreement with what he recommended. There are others. I think ultimate action on events, for example, are ones we have to study and understand very carefully before those are implemented, but that doesn't mean it has to take years to do it. It simply may not be possible in a few weeks.

So I think many of these could be implemented very quickly. And let me just share just personally because I have talked with other members of the commission. I have absolutely no sense that there is anyone on the commission that wants to delay this unnecessarily. I think everyone is looking at this very seriously and wants to move forward as quickly as practical, but we want to make sure the process is done correctly.

Senator CARPER. OK. Good. Well, that is encouraging.

Mr. Ostendorff, did I hear Commissioner Magwood say the Ostendorff half dozen? Is that what he said?

Mr. OSTENDORFF. Yes, sir.

Senator CARPER. All right.

Mr. OSTENDORFF. Real quick, I will just summarize some of those. There are six things that I think could be done very quickly here and decided on in a matter of weeks. I put those in my vote from last week.

The first is reevaluate the seismic and flooding hazards at all sites against current NRC requirements; second, perform, as Commissioner Magwood mentioned, seismic and flood protection walk-

downs to look at any plant-specific vulnerabilities; third, issue an advance notice of rulemaking to address long loss of A.C. power, this is the station blackout rule we discussed at the last hearing.

Fourth, review what is called B(5)(b), our fire and flooding protection equipment to ensure that they can withstand a seismic event or flooding, and also we have additional equipment in the event of a multi-unit accident; fifth, review the venting capability and accessibility of vents on Mark I and Mark II boiling water reactors; and sixth, maintain and train on severe accident management guidelines.

Those are examples of things I think can be done right away.

Senator CARPER. What was the sixth one?

Mr. OSTENDORFF. We have severe accident management guidelines that guide our licensees as to how to deal with a catastrophic event. Making sure that those are in good order and the people are fully trained in those is a high priority.

Senator CARPER. OK. All right.

Let me just go right down the line here. We will start with you, Mr. Chairman, if you will.

Would you want to kind of react to the Ostendorff half dozen please?

Mr. JACZKO. Well, I certainly don't have any disagreement. I would note that I think beyond that, there really aren't that many recommendations that the task force recommended for near-term action. So I think some of this discussion is really about semantics. But four of the 12 recommendations themselves were long-term recommendations. Two of them were specifically targeted toward NRC action in and of itself. So there are actually only six recommendations that are actually directed toward licensees in the short term.

Senator CARPER. And were those six the ones that Commissioner Ostendorff mentioned?

Mr. JACZKO. They were a subset of that. They are smaller. The ones that appear to be missing were recommendations related to spent fuel pools and the need to have reliable monitoring and capability to deal with spent fuel pools, which I think is one that most people would agree is an action that we would want to address in the near term.

I don't think there are that many left once we take those particular issues that we can't get all this work done in 90 days.

Senator CARPER. OK. My time is expired.

Just really quickly, Commissioner Svinicki and Commissioner Apostolakis, would you like to just give me some indication of whether you are pretty much in agreement that Commission Ostendorff's list of half dozen is easily on the money there or has he overstated the case?

Ms. SVINICKI. I would just add quickly that I did not have any negative reaction to the task force's recommendations. I agree that they are of varying complexity. And I think that my proposal was to hear from those NRC staff who would be responsible for carrying out such actions, and I think the recommendations when shaped through the NRC programmatic offices may come back to us slightly different. I would like to do it maybe once and do it right, as

opposed to continually iterating. I think prolonged uncertainty about these recommendation is very undesirable.

Senator CARPER. OK.

Dr. Apostolakis.

Mr. APOSTOLAKIS. Well, all I am saying in my vote is that I would like to have the opinion and judgment of the senior management before we go ahead. That doesn't mean it is going to take forever to get that, but this sounds like a reasonable list, but I would like to have this additional input before we make a decision.

Plus, senior management may come up with additional recommendations that can be implemented immediately. I don't think we should limit ourselves to what the task force said.

Senator CARPER. OK.

Thanks very much.

Senator BOXER. Senator Barrasso.

Senator BARRASSO. Thank you, Madam Chairman.

Chairman Jaczko, how involved were you in the selection of the six members of the six members of this near-term task force?

Mr. JACZKO. I was not involved.

Senator BARRASSO. Not involved?

Mr. JACZKO. I mean, I believe the EDO may have told me the list of people that would be on it and I think I OKed it.

Senator BARRASSO. Were you involved in any way or shape or form in the deliberations of the task force?

Mr. JACZKO. No, not at all. I spoke to them before they began their work and told them they had a tremendous responsibility to do and they should do it the best they could.

Senator BARRASSO. The task force report talked about a patchwork of requirements flowing from the current regulatory program. Do you agree with the implication that our current regulatory program of nuclear safety in the United States is defective or not working?

Mr. JACZKO. I don't believe that is what the task force said. The task force said we have a patchwork. I think the inference that it is defective therefore is not true. It is true that we have a patchwork of regulations. That is what the task force indicated. We have some things that, for instance if you just look at emergency procedures. We have emergency procedures that fall into three classes, the standard emergency procedures that we call emergency operating procedures. We then have procedures for severe accidents. And then we have procedures dealing with what we call essentially the September 11th actions.

Each one of those has a different regulatory treatment, but all three of them are likely comparable in their importance and should be integrated into a whole process of procedures. So that was the patchwork that existed. Each of those came out of a particular incident. The severe accidents came out of the 1980's and when we recognized that there was a need to have a better preparation for severe accidents. The last, the extensive damage mitigation guidelines came out of September 11th.

So there was never an effort to look at those in a holistic way as part of a unified set of procedures. That is simply what the task force is recommending. And in some cases, some would get greater

regulatory treatment than they get right now, in particular the severe accident management guidelines.

Senator BARRASSO. Commissioner Ostendorff, you stated in your notation vote response sheet that the NRC is an agency that "prides itself on openness and transparency." You also referenced that the NRC has principles of good regulation that you use in your decisionmaking.

If the NRC simply has a couple of public meetings on these task force recommendations, would that suffice to meet the goals of openness and transparency and meet the standard of the NRC principles that you referenced?

Mr. OSTENDORFF. Senator, thank you for the question. I think public meetings are a very key component of that effort. We had a public meeting just last Thursday at the NRC which I think is a very good start. I think all the Commissioners here support the Chairman's call for open and public meetings as being a very key component.

There is also the discussions that will happen outside of public meetings that will help inform the prioritization that these individual recommendations should receive.

Senator BARRASSO. OK. And you said that you didn't believe that the existing regulatory framework is broken. Is this 82-page report larger in scope than maybe you expected, given that statement?

Mr. OSTENDORFF. If I can, Senator, address that comment. I agree with all of what the Chairman said just a few minutes ago on his characterization of the patchwork comment. I think there has been a dynamic evolving buildup of regulations in response to events. And so I don't think that the patchwork is a fair characterization itself, but I think the Chairman's explanation is correct here.

I think it is something that we ought to look at, but I don't think it is something that is an immediate concern that would suggest our existing regulations are not safe and proper.

Senator BARRASSO. Thank you very much.

And then Commissioner Svinicki, if I could, you said in your vote "lacking the NRC technical and programmatic staff's evaluation" beyond that of the six NRC staff members. You said "I do not have a sufficient basis to accept or reject the recommendations of the near-term task force."

In your opinion, how can we achieve a sufficient basis of knowledge to then make that decision about accepting or rejecting these recommendations?

Ms. SVINICKI. I had made a proposal to my colleagues which is not yet decided upon, but it would be that the NRC programmatic staff would take these recommendations and within 45 days come back to the commission with a prioritization and a plan for how the agency might move forward to get that more complete evaluation. They could also at that time identify the more straightforward recommendations and how they would propose to move forward on those more quickly.

So I did not think it needed to take an excessive amount of time.

Senator BARRASSO. Thank you.

Thank you, Madam Chairman.

Senator BOXER. Thank you, Senator.

Senator Sanders.

Senator SANDERS. I will just start again by telling you how I begin my thinking. I am going back to the AP article, June 20th, 2011. Federal regulators have been working closely with the nuclear power industry to keep the Nation's aging reactors operating within safety standards by repeatedly weakening those standards or simply failing to enforce them, an investigation by the AP has found.

Now, throughout this discussion, I probably a half dozen times Members of the Committee have quoted the statement in the task force which says that the task force which says that the task force concludes that a sequence of events like the Fukushima accident is unlikely to occur in the United States.

We have heard that a half dozen times, but we haven't heard the paragraph before that. And the paragraph before that says, this regulatory approach established and supplemented piece by piece over the decades, has addressed many safety returns and issues using the best information and techniques available at the time. The result is a patchwork of regulatory requirements and other safety initiatives, all important, but not all given equivalent consideration and treatment by licensees or during NRC technical review and inspection. Consistent with the NRC's organizational value of excellence, the task force believes that improving the NRC's regulatory framework is an appropriate, realistic and achievable goal.

Chairman Jaczko, what is the problem? I think again my friend from Wyoming talked about somebody saying that they were defective. I didn't hear the word defective, that the regulatory system is defective. What I hear here is they want to improve it. Do we have a problem of improving the regulatory framework?

Second of all, let's be clear what we are talking about. You have highly knowledgeable people who have made 12 recommendations. They want you to go forward. No one is saying that you have to accept all 12 recommendations tomorrow. What they are saying is look at them, analyze them, tell us what you like. I think Mr. Ostendorff has said he likes some of them. He is ready to go on some of them. Some of them he has concerns about. Fine.

What is the problem, Mr. Chairman, in your judgment, about taking these recommendations and starting an immediate discussion to see what we like or don't like?

Mr. JACZKO. I think that is something that we can do. And as I said, I think it is something we should be able to get done in 90 days.

Senator SANDERS. Ms. Svinicki, what is the problem with starting this discussion?

Ms. SVINICKI. I voted within days of receiving the task force report to respectfully, I believe, begin that discussion. So I don't see that my proposal is to take an inordinate amount of time to evaluate them.

Senator SANDERS. So you are ready to get going, then, on taking a hard look at these 12 recommendations?

Ms. SVINICKI. Yes, I am.

Mr. APOSTOLAKIS. Yes, the process has started, Senator.

Senator SANDERS. Mr. Magwood.

Mr. MAGWOOD. Yes, I think I was actually the first one to vote.

Senator SANDERS. So you are ready now to begin immediately to start a discussion on these 12 recommendations?

Mr. MAGWOOD. Absolutely.

Senator SANDERS. Mr. Ostendorff.

Mr. OSTENDORFF. Senator Sanders, I think we are all ready.

Senator SANDERS. I am glad to hear that.

Chairman Jaczko, is the process now ready to go? Where has the confusion been? What am I missing here?

Mr. JACZKO. Well, I think there is a bit of, or we are kind of stuck I think in developing the process, rather than just moving forward to actually begin the discussion and the dialog on the recommendations. Right now, what we are talking about is the process to have that discussion. And unfortunately, certainly with the exception of Commissioner Ostendorff, most of my colleagues have weighed in about the process, not about specific recommendations.

Senator SANDERS. And what are the differences of opinion with regard to process?

Mr. JACZKO. Well, I think they are not severe. They are minor, but I think a big difference is setting an expectation for when we can get completed. I have suggested that we work to get completed our decisions about all 12 recommendations in 90 days. I think that is a reasonable timeframe. I think that is perhaps what I hear is the biggest point.

Senator SANDERS. Ms. Svinicki, do you think we could do it in 90 days?

Ms. SVINICKI. I agree with the Chairman's characterization.

Senator SANDERS. Do you think we can? Well, do you agree with him that we can get these recommendations done in 90 days?

Ms. SVINICKI. No, I believe that some of them are complex enough that it would not be possible to make a final decision on all 12 in 90 days.

Senator SANDERS. Mr. Apostolakis.

Mr. APOSTOLAKIS. I believe we can do it in 90 days. I think the major difference, Senator, process-wise is that the Chairman's original road map would go directly to public meetings of the commission. Some of the members feel that we should get senior management evaluation first of the recommendations.

Senator SANDERS. OK.

Mr. Magwood.

Mr. MAGWOOD. As I see the votes being cast so far, I see a great deal of commonality. So I think there is actually a consensus coming here quite quickly on the commission to move forward with this. And as I stated earlier, I do think some of these recommendations can very likely be implemented very quickly.

Senator SANDERS. Do you agree with the Chairman that we can get moving on this?

Mr. MAGWOOD. I think we can launch some of them sooner than 90 days. Others may take longer.

Senator SANDERS. Mr. Ostendorff.

Mr. OSTENDORFF. I believe that we can act on most of these recommendations within 90 days, perhaps not all. I think unfortunately in the press there has been a perception created there is great dissension among the commissioners on this topic, which I quite frankly don't think is there. I think there is a lot more con-

sensus. Everybody is ready to move forward. I think there is a lot of agreement on the need for us to place this at the highest priority. And I think it clearly is.

Senator SANDERS. OK.

Madam Chair, thank you.

Senator BOXER. Thank you.

Let's see, Senator Alexander.

Senator ALEXANDER. Thank you, Madam Chairman.

Mr. Jaczko, a traffic policeman's job would be to keep the traffic safe, and all five of you said public health and safety was your job. But if the traffic cop just stopped all the cars from going anywhere, his supervisor might come down and say, hey, wait a minute, that is not very creative of you.

Is there anything within the charge of the commission to make it possible for a power plant to create an environment in which a nuclear power plant can actually operate and in which a new one could actually be built?

Mr. JACZKO. I don't think there is a charge specifically for that motivation for what we do.

Senator ALEXANDER. That is not a part of your charge, to create an environment in which a power plant—if you only charge is public health and safety, you would shut them all down.

Mr. JACZKO. No, I think our charge is reasonable assurance of public health and safety. So the charge is that we are providing an level of assurance that is reasonable.

Senator ALEXANDER. So there is no economic responsibility? No responsibility you have to make sure that a power plant can also be operated economically at the same time?

Mr. JACZKO. No. Our requirements really fall into two categories, those things which are kind of the basic tenets of safety based on court decisions. The commission is required to make those safety decisions irrespective of the economic considerations of that decision.

Certainly, when it goes to the implementation of requirements, we can consider the economic impact and look to see which is the most cost-beneficial.

Senator ALEXANDER. You can consider that?

Mr. JACZKO. At that stage, but not at the basis of determining whether something is a fundamental safety requirement. At that point, we are bound by a court decision from considering economic matters.

Senator ALEXANDER. Well, is it your objective to create an environment in which nuclear power plants could be built?

Mr. JACZKO. No, my goal is to continue to ensure that we have an environment in which nuclear power plants are safe, and if new plants are to be built that they will be as safe as our requirement dictate.

Senator ALEXANDER. So you don't have any—what about the recommendation of the commission that recommended that you complete without delay the design certification of the AP 1000 and the economically simplified boiling water reactor design?

Mr. JACZKO. I think that was a recommendation not to encourage the commission to take action, but it was a recommendation indi-

cating that there was no reason to specifically delay action as a result of these recommendations.

Senator ALEXANDER. Well, that sounds like action to me. Are you planning to do it without delay? Does that mean within 90 days?

Mr. JACZKO. We are continuing to move forward.

Senator ALEXANDER. Can you do it within 90 days?

Mr. JACZKO. We will be fairly close to receiving a final rule on the AP 1000 in October, which again is part of the reason for us to look at these recommendations in 90 days because when we go into the decision of looking at a final design for, for instance, the AP 1000, I think it is important that we have dispositioned the recommendation so we know what, if any, changes would impact those new reactors.

Senator ALEXANDER. Will considering all of the recommendations, all 12, delay your consideration of the design certification for the AP 1000 and the new boiling water reactor design?

Mr. JACZKO. Not in my opinion. However, I believe if we don't consider the recommendations in a timely way, it could have the potential impact of delaying the action on the new reactor licensing.

Senator ALEXANDER. But there is a lot of talk here about delay. This report said you should do this without delay. I mean, why did they say that?

Mr. JACZKO. I don't know. That is probably something better to task the task force. But again, I think the information that is relevant there is that it was useful information for the commission to know that there were no immediate issues with the design certification.

Senator ALEXANDER. But let me press you a little further. You said you think everything could be done in 90 days. Does that include these two designs?

Mr. JACZKO. What I said is that it is important for the commission to disposition the 12 recommendations. I would note that the statements related to new reactors are not any of the 12 recommendations of the task force.

Senator ALEXANDER. But they are in the report.

Mr. JACZKO. That is correct.

Senator ALEXANDER. Yes. And they say without delay, right?

Mr. JACZKO. That is correct, and we are currently not delaying any of the new reactor work. However, as I said, if we don't promptly act on these recommendations, it will create uncertainty for what actions would be applicable to those new reactors, which in my opinion could actually lead to a potential delay in that work if we don't disposition these recommendations promptly.

Senator ALEXANDER. Well, as you can tell, my hope is that you if you are going to take the Committee's advice to do the task force recommendations within 90 days, that you will take the task force's advice to complete these design certifications without delay.

Thank you, Madam Chairman.

Senator BOXER. Thank you.

Senator, I would just call your attention to the mission of the NRC, which is clearly stated. The U.S. NRC is an independent agency created by Congress. The mission of the NRC is to license and regulate the Nation's civilian use of byproduct source and spe-

cial nuclear materials in order to protect public health and safety, promote the common defense and security, and protect the environment.

Senator ALEXANDER. Well, Madam Chair, I would think that it is still a legitimate question whether a traffic stop should stop all the traffic. That is one way to have safety. His supervisor still might ask him if he couldn't be a little more creative and at least people drive in a safe way.

Senator BOXER. I don't think that is the right analogy, because there is really no analogy when you are dealing with nuclear energy.

Senator ALEXANDER. We have had a lot more death in traffic. We tolerate 38,000 traffic deaths every year. We have never had one with a nuclear reactor in the United States.

Senator BOXER. That says a lot for the fact that we have an independent agency protecting the health and safety. They said the same thing in Japan until recently.

But in any event, let's move on.

Obviously, we have differences here just like you have differences there. But I want to make the point, and I really do want to make this point because I have made it to you before. As many differences as we have here, we are friends. And we differ. We argue. We debate. I am sensing with you that maybe there needs to be a little bit more friendship. Just a point spoken as a human being, not as a Senator.

I think it is important that these differences not become personal. If Inhofe and I can do it, we are really good friends, then anybody could do it.

Anyway, here we go. We are moving on and we are going now to Senator Lautenberg.

Senator LAUTENBERG. Thank you, Madam Chairman.

This is beginning to look like a glee club here, everybody happy faces. What you see isn't really what you get.

Mr. Jaczko, the NRC recently renewed the operating license for Hope Creek nuclear plant in New Jersey through 2046. Now, what did we learn from the incidents in Japan that you would take into account when deciding to grant the extension? And which conditions would that influence you to place on it?

Mr. JACZKO. Well, for any reactor, whether it is a reactor that has been operating for 35 years or 45 years, if we adopt any of these recommendations, they would likely apply to every reactor in the Country, with the exception of some of the recommendations like the hardened vent, which would only apply to boiling water reactor design.

So the license renewal process is really about ensuring that they have a program in place to deal with the aging of components and systems. And nothing that came out of the task force specifically touched on those issues, but called, for instance, for a number of recommendations dealing with earthquakes and those kinds of things that we would expect that any plant, Hope Creek being one of them, would be required then to implement along with the others.

Senator LAUTENBERG. So not too much specific information came from the Fukushima failure that influenced your granting of the extension of the license?

Mr. JACZKO. Right. Not at this point, nothing that affected the extension, but ultimately if these recommendations are adopted, some of them would apply to Hope Creek as an operating plant, just like any other plant in the Country.

Senator LAUTENBERG. The Mark I containment system that was used at Fukushima is also used at U.S. plants including two reactors in New Jersey. And you said in June that we didn't know what went wrong with the containment system at Fukushima. Now, what did this uncertainty factor bring into the recent NRC task force recommendations? When do you think we will know all we can about what went wrong at the Japanese plant?

Mr. JACZKO. Well, that could take possibly years. What will need to happen is that they will have to decontaminate the facility, decontaminate the reactor itself to be able to get in and actually analyze and really look at the equipment and try and, almost like a criminologist, to try and recover and reconstruct what happened in the accident.

But as the task force laid out, there are some things we can do in the short term, in particular with the hardened vents. This is an area where the task force recommended an NRC requirement. The Mark I containment system, which is similar to what they had in Japan, are containment designs that do have hardened vents, but they have never been done as a formal regulatory requirement. So the task force recommended that we do that.

The advantage of that is that it brings it under our inspections and our oversight and all those kinds of things so we can monitor it and make sure it is being used effectively. So that is something specifically for the Mark I's that has been recommended that we take action on.

Senator LAUTENBERG. But it would take years, you say, to fully understand what took place there?

Mr. JACZKO. It may.

Senator LAUTENBERG. It is hard to imagine because there were specific events. We are not talking about the influence on the people who were in the area, that kind of thing, but the specific trigger for this collapse is pretty much obvious.

Mr. JACZKO. And that is certainly why you see a number of recommendations from the task force. They acknowledge that there were some things we don't yet know, and those things will need additional study. But clearly, there were at least six recommendations they believe we had sufficient information to take action on right now.

Senator LAUTENBERG. Looking ahead a little bit, you said in a 2008 speech that "I believe that the NRC should develop new regulations which require spent fuel to be moved to dry cask storage after it has been allowed to cool for 5 years." The task force recommended enhancements to spent fuel pools, but did not advocate requiring dry cask storage.

Now, given that it falls short of your 2008 proposal, how can we be sure that the task force approach here will ensure the safest form of storage for spent fuel?

Mr. JACZKO. I think the task force recommendation is really a short-term recommendation, which is precisely to ensure that if an event like Fukushima were to happen, the challenges we saw there, namely knowing how much water is in the pool and making sure that there is sufficient capability to put water into the pool to keep it cool, that those things would be addressed. That is what they have asked for in the short term.

And then over the longer term, we can analyze this issue more importantly of whether we should have more fuel in pools versus in dry cask storage. But they really went at that short-term issue of making sure that the fuel that is in pools is going to be in an enhanced configuration and safer that way.

Senator LAUTENBERG. I am being ruled out, so thank you.

Mr. JACZKO. I answered a little long, I think.

Senator BOXER. Thank you, Senator.

Senator Sessions.

Senator SESSIONS. Thank you.

Mr. Jaczko, there have been some complaints about your leadership at the commission, as you are aware, in the media. I do believe it is important that you reflect the proper role of the Chairman, which has I am sure some administrative responsibilities. But we have a commission and the commission was established to decide as a commission important issues.

With regard to this emergency power, did you file an official document assuming emergency powers of any kind?

Mr. JACZKO. No, Senator.

Senator SESSIONS. How did you announce that you were assuming emergency power?

Mr. JACZKO. It is not something which we have procedures in which that is formally done. About three or 4 days into the incident, I was made aware that my colleagues on the commission had inquired about that. I spoke with the General Counsel. I actually asked members of the staff should I make a formal declaration of use of emergency powers. And in all honesty, I got one or two people who said no, that would just distract you from the work that we are doing. And frankly, I got distracted by dealing with the emergency response and didn't turn back to it until several weeks later.

Senator SESSIONS. Well, did you seek a formal opinion from counsel as to whether an event on the other side of the world would give the American Nuclear Regulatory Commission, the commission chairman, the power to assume emergency powers that would in some ways diminish, obviously, the influence of the other members of the commission?

Mr. JACZKO. I did seek that and the general counsel advised me that it was perfectly appropriate.

Senator SESSIONS. Do you have a written opinion to that effect?

Mr. JACZKO. I do have a written opinion. I believe that has been provided to the Committee.

Senator SESSIONS. With regard to this Committee, well, are you still assuming those powers?

Mr. JACZKO. No, I ceased that weeks or ago or perhaps months.

Senator SESSIONS. Have you issued a report of what you did during the course of that time?

Mr. JACZKO. As I indicated, we provided situation reports to the commission at the beginning of the incident. Those situation reports were issued multiple times a day.

Senator SESSIONS. No, the Reorganization Act, the statute of 1980 said following the conclusion of the emergency, the Chairman or member of the commission delegated emergency functions under the subsection shall render a complete and timely report to the commission on the actions taken during the emergency.

Have you done that?

Mr. JACZKO. I believe that I have.

Senator SESSIONS. Is that available to us?

Mr. JACZKO. We can provide you with the boxes of situation reports which detail the——

Senator SESSIONS. Well, no, that is not what the statute requires, would you not agree, Mr. Jaczko? Why would you hesitate to do a complete and timely report of the actions taken during the emergency?

Mr. JACZKO. I have conferred with the General Counsel and I believe that I have more than satisfied the requirements of that particular provision. Tremendous information was provided to the commission about actions that were taken during the response.

Senator SESSIONS. Well, I am not arguing about that.

Mr. JACZKO. In the form of reports.

Senator SESSIONS. You have given a lot of information. I believe the statute under which you serve requires that the Chairman or the emergency official render a complete and timely report, not a series of situation reports in a box somewhere. Wouldn't you agree that that is what it seems to say plainly?

Mr. JACZKO. As I read the statute, it is clear that they envision one piece of information.

Senator SESSIONS. Well, why wouldn't you do that?

Mr. JACZKO. Because I think we provided much of that information already to the commission and I have heard nothing from my colleagues on the commission that they have any interest in that particular report.

Senator SESSIONS. Well, I have an interest in it. The people of the United States have an interest in the Chairman of the NRC following the plain statutory requirement. So I will ask you, what hesitation do you have to put a formal report together that says what you did while you assumed emergency powers?

Mr. JACZKO. I will be happy to put that together, and I believe I have more provided information to the American people through testimony, through a variety of different reports that have provided significant information about the actions that were taken during this event. But I would be more than happy to summarize those in a single report.

Senator SESSIONS. I think you should comply with the statute.

Mr. JACZKO. Senator, I would just like to comment that I have conferred with the General Counsel and we believe that I have more than complied with the statute in that particular provision and we can provide you with analysis of that as well.

Senator SESSIONS. I believe it requires a single report after the conclusion and it is pretty obvious you have not done that.

With regard to this committee, the six members that were appointed, you said you didn't select them, but EDO did. Who is EDO?

Mr. JACZKO. The Executive Director for Operations.

Senator SESSIONS. And who does that person work for?

Mr. JACZKO. Nominally to the Chairman.

Senator SESSIONS. And so did you know who was being selected and were those members discussed with you before they were selected?

Mr. JACZKO. I believe he gave the names to me and I said that they were appropriate and I thought they were good selections.

Senator SESSIONS. Did you make any suggestions to him about names that might be on that list?

Mr. JACZKO. I don't recall whether I did or I didn't.

Senator SESSIONS. You don't recall?

Mr. JACZKO. It was not something that was formally presented to me. It was presented to me verbally and I believe I signed off on it verbally. I believe that they were a good selection, the people that he selected were excellent people. And I don't recall if there was at a time a smaller group or a larger group. I could check my records, but it was not for me a significant decision for me and I trusted the EDO to appoint the appropriate people to that task force.

Senator SESSIONS. My time is up.

Thank you, Madam Chairman. I will submit a written question concerning how it was that the mission plan that stakeholders would be invited to submit suggestions was eliminated from the staff effort.

Senator BOXER. Thank you very much, Senator.

The last hearing we had here, we did ask the Chairman about this in depth about his taking over emergency powers.

Do not start the clock yet because I have another thing to do.

Senator Cardin, I am just going to put this out here. And he would like this in writing, this answer. If the commission delays action on task force recommendations on the grounds you don't have enough information yet about what happened at Fukushima to move forward, does that suggest the NRC also doesn't have enough information to move forward with relicensing existing reactors or licensing new reactors?

So that is a question he wants answered.

We are going to have a second round here. I think Senator Carper is coming back and we will have a second round.

Senator SANDERS. I just have one brief question.

Senator BOXER. I go first.

Senator SANDERS. I am sorry.

Senator BOXER. And you go after.

Senator SANDERS. You are the Chair.

Senator BOXER. Thank you for noticing.

[Laughter.]

Senator BOXER. OK. Here is where we are. I want all of you to know we are going to have you back every 90 days until I know what you are doing. And we will take all the answers you gave, how much you are going to work to make this happen, a half

dozen, a dozen, a baker's dozen, whatever it is, and we are going to stay on this.

I will tell you why. After 9/11, we had all these great ideas. Everybody thought great, the NRC took decisive action. And 9 years later, some of these things went into effect. That is not going to happen. Of it is happens, the American people are going to know.

And here is the point. Whether you love nuclear energy, don't like it or you are agnostic, it ain't going anywhere if it isn't safe. And it is not going anywhere if the public doesn't have faith in you. If the public thinks that you are somehow not independent, not doing their business, let me tell you they won't be happy.

So I have a question for you Commissioner Svinicki, in your July 19th vote on the task force report, you stated, "The NRC finds itself at the appropriate point now to move away from small group taskings, including the commission itself attempting to labor in isolation."

This is very disturbing to me, very disturbing, the commission itself attempting to labor in isolation. You are an independent entity. What are you talking about? Isolated from who?

Ms. SVINICKI. I meant that term to reinforce the importance of having public meetings and stakeholder outreach, meaning that the commission ought to have the benefit of——

Senator BOXER. But you don't think that it is up to stakeholders to decide what we should approve? You are an independent commissioner, are you not?

Ms. SVINICKI. Yes, I meant that the process should be informed by those public——

Senator BOXER. OK. And Chairman Jaczko has laid out a plan. He proposes a process to move forward over the next 90 days to receive broad input from NRC staff and external stakeholders and to have votes by October 7th, 2011. Do you agree with that?

Ms. SVINICKI. As I indicated in response to your earlier question——

Senator BOXER. I am not asking you an earlier question. I am asking you this question. Chairman Jaczko has proposed a process to move forward over the next 90 days to address your concerns, to receive broad input from NRC staff and external stakeholders and to have votes on specific recommendations by October 7th, 2011. Do you agree? It seems to match what you called for. Now he has put it out there. It echoes what you want. Do you agree?

Ms. SVINICKI. I support commission meetings. As I have indicated, I am not sure that all the task force recommendations could be decided in 90 days.

Senator BOXER. How many do you think could be decided on in 90 days? Commissioner Ostendorff has pointed out six. Do you agree with him? Can they be decided in 90 days?

Ms. SVINICKI. I had proposed in my July 19th——

Senator BOXER. Yes or no? Yes or no? Do you agree with him, that six of these could be decided in 90 days?

Ms. SVINICKI. I don't have a specific count.

Senator BOXER. OK. Well let me just say your responses disturb me. When you say that the commission isolated. Your role by statute is to be independent. Chairman Jaczko has laid this out. I want you to know I have 7 million people who live within 50 miles of

San Onofre. I went there with the wonderful friend sitting next to you, Commissioner Apostolakis.

And you know what they told me? I said, what is your plan if there is an emergency. They said, we have to go out on the highway. That is all we can do is escape that way.

Do you ever go to those freeways? You probably may not have. You can't even move an inch on some of those freeways. And I have 7 million people there. And you are sitting here and basically saying you can't move forward.

And I want to compliment the members of this special task force. It is not red tape at all. It is 12 recommendations. They make sense. And I am stunned to hear that you—is there one that you could say we can move forward before you hear from the industry? Anybody? Any one of these you can recommend?

Ms. SVINICKI. I agree that the task force identified the correct areas, but I would like the NRC staff that would be responsible for carrying out the recommendations, I would like to have, respectfully, their input prior to deciding on the final form.

Senator BOXER. That is right. And Chairman Jaczko has laid out a path to do just that, but you say you won't be ready in October. What is the date you will be ready? What date do you think is good to be ready to vote on perhaps a half dozen simple ones that everyone else seems to think we could move on? What is the date? Give me a date?

Ms. SVINICKI. My objective would be, if some are less complex, to move on them before 90 days.

Senator BOXER. Excellent. Which ones do you think those would be? What is less complex? I looked at all of these. Most of them don't seem too complex, especially the ones that deal with making sure that the plants undertake more safety precautions, emergency preparedness and all the rest.

Which ones do you think are less complex than the others? Give me a couple out of the 12.

Ms. SVINICKI. I think that the re-looking at the flooding and seismic requirements to make sure that we are using state-of-the-art knowledge there is a very straightforward recommendation.

Senator BOXER. So you like the recommendation that every 10 years, the operators of these plants have to come up with new assessments as to the safety. That is the recommendation.

Ms. SVINICKI. I was referring to the recommendation that tasked the staff to re-look at our basis on seismic.

Senator BOXER. Well, how about that one? The one I just said. It is very clear. They say every 10 years, the operator of a plant that is located near flooding and seismic has to do a re-look at the problems. Because with science moving forward, Commissioner, we have new information all the time as to whether the seismic was worse, less harsh. Right now, we are very concerned because science shows us that it is moving in the wrong direction, more tsunamis, more earthquakes. Harder, deeper. What do you think about that? Every 10 years the operators there ought to look at that. That is one of the recommendations.

Do you think that is complex? Is that complex?

Ms. SVINICKI. I think that we as a agency constantly look at our State of knowledge in those areas, as you suggest.

Senator BOXER. Do you think it is complex to ask the operator who is operating a plant on or near an earthquake fault or near a possible tsunami zone to ask them every 10 years to reassess the safety of their plant? Is that a complex recommendation?

Ms. SVINICKI. I would assess that we actually require them to be looking at that constantly if there is any new information that comes forward as is the case in California with faultlines off the coast. We require it even in advance of a 10-year period we require it.

Senator BOXER. Good. So you would support, then, a every time there is new science an overall new look at the safety of these plants. Is that correct?

Ms. SVINICKI. Yes, I believe we require that now.

Senator BOXER. Excellent. Well, are you ready to vote on that in the next 90 days? What you say you support, are you ready to go for that in the next 90 days?

Ms. SVINICKI. Respectfully, my proposal asks that the NRC staff come back and provide us with the implementation on these recommendations. And I wanted, before I made a final decision, to be informed by that input from the NRC.

Senator BOXER. Well, all I can say is if I am the people of California and I am watching this, right now I am not so sure about whether I want that plant to operate, because it is very simple. And we have our plants there coming in to get relicensed. And I urge them not to do that, not even to issue, not to move forward until they have studied it.

You seem to be on my side, but then you have to hear from everybody else. I would submit to you it is common sense. There are certain things, you should have more belief in what you say because it is common sense.

And I am just saying we have oversight over the work you do. Mr. Chairman, I want to compliment you. And I want to say to the commissioners who are ready and willing and able to act in a timeframe of 90 days, thank you. Because if we don't do that, we are not going to see people supporting nuclear power.

I mean, I take an opposite view of my friends on the other side today. The more you convince the people that you are doing your job, the more they are going to be comfortable with nuclear power. If you give me answers like I have to wait and I can't tell, and then you have a situation where it took 9 years to put into place the last safety measures, that is ridiculous.

So as long as I am sitting over here, and I have a voice, I am going to continue to call you before us. I mean, I really could get used to this because I think you need to know how important the work you do is to the safety of the people, first and foremost, and to the future of nuclear energy, second.

Senator Sanders.

Senator SANDERS. Just a few questions.

Chairman Jaczko, some of my Republican colleagues have kind of suggested that you have initiated a Bolshevik coup on the NRC. You are running a dictatorship to undermine American democratic values. So I just wanted to ask you once again, to be clear. Do you believe and does the nonpartisan General Counsel of the NRC be-

lieve that you have fulfilled the statute in terms of your utilization of the emergency powers?

And in terms of emergency powers, as I understand it, quite appropriately after Fukushima, you wanted to make sure that, was it 13 plants that we have in this Country that are similar design to the Fukushima plants? You quite appropriately wanted to make sure that something similar to what happened in Japan does not happen in the United States. Is that correct?

Mr. JACZKO. Well, it certainly was a piece of it. The primary focus was really on American citizens in Japan and ensuring that we were doing everything we could to protect them as they were there. And that was in many ways the prime focus.

Most of the issues related to how we dealt with U.S. plants were really dealt with by the commission when it established this task force. So that was how we decided to go forward in that way. So I didn't really exercise any authorities with regard to domestic facilities.

Senator SANDERS. So it was just to protect the interests of American citizens in Japan?

Mr. JACZKO. Correct.

Senator SANDERS. And does the nonpartisan General Counsel believe that you acted appropriately within the statute?

Mr. JACZKO. I believe that is the case and he is somewhere he, so he can probably——

Senator SANDERS. Madam Chair, can we ask the gentleman?

Senator BOXER. I am sorry. I was distracted by my staff. Say again?

Senator SANDERS. May ask the General Counsel, did he act within the law?

Senator BOXER. Yes, you can.

Please, sir. Please join us.

Mr. BURNS. Senator, my name is Stephen Burns. I am General Counsel of the NRC, a career Federal employee.

The simple answer to your question is I believe the Chairman's actions were consistent with the powers that he has under the statute. I received an inquiry from his office fairly early on in the event. And based on my view and actually an assessment of my predecessor's view of actions taken in response to 9/11, when there also was not a specific event at a U.S. facility, although a threat environment obviously to U.S. facilities, my view was that given the intentions of President Carter and congressional essentially endorsement under the reorganization plan, that his actions were consistent with those responsibilities.

Senator SANDERS. And you are, as I understand it, a nonpartisan official.

Mr. BURNS. Yes, I am a career official. I am appointed by the commission.

Senator SANDERS. Madam Chair, thank you very much.

And I appreciate you coming up here. I would hope that puts an end to this consistent attack against the Chairman.

Let me ask Mr. Ostendorff, if I could, a question.

Mr. Ostendorff, my understanding is that you are prepared to move pretty quickly on a number of the recommendations of the task force. Let me ask you about their first recommendation, and

that is that the task force recommends establishing a logical, systematic regulatory framework for adequate protection that appropriately balances defense in depth and risk considerations.

That is an important recommendation. Are you prepared to move rapidly on that one?

Mr. OSTENDORFF. Senator, thank you for the question. I addressed that specific recommendation in my vote in some detail. I think it needs to be looked at. I have some concerns that trying to embark upon that right now will distract us from taking other actions that can and should be taken in the short term. But I do support us taking a look at trying to improve the framework we currently have.

Senator SANDERS. I just don't quite get that answer. You see his as an important recommendation. No one is suggesting that you have to swallow hook, line and sinker what people recommend. What is the problem with beginning that discussion right now?

Mr. OSTENDORFF. Senator, I have been around nuclear propulsion in the Navy for many, many years and I have seen a lot of different efforts taken in the Naval Sea Systems Command to improve reactor safety on our nuclear-powered submarines and carriers. I have seen how corrective actions are implemented.

I think this is one that is going to take a few years to go, recommendation one. I support moving forward as a separate effort to look at recommendation one. But I don't think that should hold us up in trying to take shorter-term actions.

Senator SANDERS. OK. Thank you.

Mr. Chairman, I would yield the floor then.

Senator CARPER.

[Presiding] All right. We are going to close it out and have a couple of questions to ask of our commissioners, and then I think we are going to vote here pretty soon.

This is a question for Commissioner Magwood and Commissioner Ostendorff, if I could. It is my understanding that the majority of you have asked senior staff to take a second look at these recommendations. And you have asked the senior staff folks to provide suggestions to the commissions on how to proceed with these recommendations.

Here is my question. And we have talked around this already, but I am going to ask you just directly. Since senior NRC staff made these recommendations in the first place and now you are asking other senior staff to come in and to provide suggestions, why is this next step needed? And just explain that to me. Why is it needed?

Mr. MAGWOOD. I will start. First, I think that, well, I will speak for myself here, certainly. My perspective is that it isn't simply another assessment by NRC staff, although I do look forward to seeing what the senior staff thinks about the recommendations. For me, the most important thing is to have the staff interact with stakeholders in a direct and comprehensive fashion to understand what stakeholders' responses are to the various recommendations and then see what their suggestions are. And then think about that and feed that information to the commission.

So I don't look at it as simply the NRC staff looking at what the NRC staff has already said. I think of it as NRC staff using the

mechanisms we have in place, public meetings, across-the-table discussions in public venue, of course, to hear details about the reaction to the recommendations, and then get that back to the commission. That is really the normal in large respect what we do every day.

Senator CARPER. Mr. Ostendorff?

Mr. OSTENDORFF. Senator Carper, thank you.

I would agree with Senator Magwood's comment. I will just make two points here in addition. One is when I asked our Executive Director for Operations, Bill Borchardt, how he thought we should proceed, he supported having his office, EDO's office and those that work for him, come back and give us an integrated prioritized list.

As I said in my opening statement, that was a key lesson learned from Three Mile Island when the agency did not do that. I think we will get more bang for the buck implementing those safety enhancements that will make a real difference sooner by having this prioritized list. We have called for that within 30 days.

The second piece is that not all these recommendations are equal. And there are some that should be done right now and there are some that require a little bit more information.

Senator CARPER. All right. Thank you.

Chairman Jaczko, a question in orders versus regulatory process. Some of the regulatory tools at the commission's disposal are the rulemaking process and apparently the issuance of orders. Could you just describe or compare both processes for us? And for each, what kind of opportunities are there for public comment and for input from stakeholders?

Mr. JACZKO. Well, generally, the orders have more limited opportunity for public involvement. They are usually activities that either we believe need to be taken in a very prompt period of time for safety reasons, or are responses to violations of our regulations.

So they are not a preferred tool because they don't provide for the more in-depth public engagement that a regulation would. One of the activities that I have challenged the staff with since I have been Chairman is to better streamline our rulemaking process so that we can use that as a more viable tool and get things done in a more timely way, but still have that stakeholder input.

So generally, the orders have less involvement, but it is usually a situation in which we feel there is a clear safety need that requires prompt action. In most cases when it is relating to a specific issue, we usually initiate a rulemaking process as well, so that eventually that same content of the order gets captured in a regulation.

Senator CARPER. All right. Let me just followup with that, if I could. Stakeholders in industry and the environmental community have shared and discussed concerns with my own staff about moving these recommendations through your order process. And what has been the NRC's experience with expedited rulemaking and might it have a role to play with some of the recommendations adopted by the commission?

Mr. JACZKO. Well, I think everyone that comes in as Chairman of the NRC, and probably every commissioner that comes to the NRC, wants the rulemaking process to go forward faster. We have

mixed success with that, and a lot of it, I think, comes down the usual challenges of resources and focus and prioritization.

But we did recently complete a regulation from start to finish in about 4 months, having to do with an issue related to how we deal with fatigue and workers who may get tired at a nuclear power plant.

So I think there are ways to do it. It would cause us to change how we do our regulations, but I think it is doable. In my mind, that would be the most preferable way for some of these things is to do them in expedited rulemaking that can be done in four or 5 months, or something like that, rather than the two to 3 years that it typically takes.

Senator CARPER. OK. Well, the vote hasn't started yet and so we have it looks like another hour or two.

[Laughter.]

Senator CARPER. All right. Not that long.

But what I would like to do is just do something—it is my mother calling in to say haste makes waste. Not really.

What I want to do is, sometimes I like to at the close of a hearing ask, you know, we always ask for an opening statement. We ask you to respond to our questions. Sometimes, I find it is helpful to have a closing statement. I am not going ask for a lengthy closing statement, but just maybe something like given the conversation we have today or questions that have been asked and responses that have been given, this may be a closing thought as we prepare to go vote to save the Republic.

Captain Ostendorff, Chairman Ostendorff, or Commissioner Ostendorff, why don't you go first?

Mr. OSTENDORFF. Thank you, Senator.

I would say that we talk all the time. We meet each week when we are in town.

Senator CARPER. How often are you all in town?

Mr. OSTENDORFF. I would say we probably are all together to meet at least 3 weeks out of four.

Senator CARPER. OK.

Mr. OSTENDORFF. In individual periods, consistent with the Government in the Sunshine Act.

Senator CARPER. OK.

Mr. OSTENDORFF. And I would say that it is clearly my perception based on discussion with all my colleagues here that we all want to move forward quickly; that we all want to do the right thing. And I don't think we are as far apart as maybe some of the questioning might have suggested. I really think we want to do those things, but not all of these are longer-term actions. Some are short term. Some are intermediate. And some of those will require more information.

I used the one example on the hardened vents that was asked about. I asked the Institute of Nuclear Power Operations on July 15th, a senior executive there, do you have sufficient information on the hardened vents in order right now to support the order recommended by the task force to install those. And he said no.

The task force report itself said that we do not understand whether or not the operators at Fukushima actually operated these vents.

I am using that just as a discrete example we can all understand. I think we need to explore this area. It could be a month from now we have sufficient information to make a disposition of that one in a smart manner. But that is just one example. There are some things that do require more information, more granularity.

Senator CARPER. OK. Thanks.

Commissioner Magwood, a closing thought or two, please.

Mr. MAGWOOD. I think Commissioner Ostendorff actually covered it. I think he said it quite well.

The only thing I would add is I believe that we will move forward quickly. There is a lot of willingness on the commission to get this done. We are taking this very seriously. I think we all were talking to each other during the event. I think almost immediately, we began to think about what lessons were being learned as were watching it unfold on television.

So I see this as just the conclusion of what started back in March. And I feel very positive that we will get this done quickly and do the right thing.

Senator CARPER. All right. Good.

Dr. Apostolakis.

Mr. APOSTOLAKIS. I agree with my colleagues. I think the commission will act in a timely manner. It is just the details that we have to work out. So I don't see any problem at all.

Senator CARPER. All right.

Commissioner Svinicki?

Ms. SVINICKI. I agree with what my colleagues have said thus far. In summary remarks, I think that there is a lot of overlap and commonality in the approach here. And I think that want to and can, I believe it is possible to strike the appropriate balance between urgency and moving forward, and also being thoughtful and getting it right.

Thank you.

Senator CARPER. Thank you.

The last word, Mr. Chairman?

Mr. JACZKO. Well, I would say I appreciate all the comments of my colleagues and I think there are far more areas of agreement than disagreement. But I do believe strongly that it is important for us to disposition these recommendations in 90 days. And I think that is something that is doable and from what I have heard from my colleagues, I think there is perhaps more agreement than there is disagreement about that.

Senator CARPER. Good.

In closing, one of my favorite people to work here with here in the Senate is a Republican from Wyoming. His name is Mike Enzi. A lot of people in other places don't know him. I knew him when I was Governor. We worked on a couple of things together then.

Mike Enzi is the Senior Republican on the Health, Education, Labor, Pension Committee. And the Senior Democrat for many years was a guy named Kennedy, Ted Kennedy. And they were remarkably effective. The Committee was remarkably productive. And I would say to Mike Enzi, how does one of the most conservative Republicans around here work so productively with one of the most liberal Democrats? And you guys just get so much done, re-

gardless of who is the Chairman, whether it is Kennedy or whether it is Enzi.

And he said, Ted Kennedy and I subscribe to the 80/20 rule. I said: What is that? And he said, the 80/20 rule says we agree on about 80 percent of the stuff. We disagree on maybe 20 percent of the stuff. And what we have decided to do is focus on the 80 percent that we agree on. And as a result, we get a lot done.

More times than I can count I call on my colleagues on this said of the dais in the Senate to subscribe to the 80/20 rule, and if we did that on a consistent basis, I think it would be not just a better place to work, but actually probably a better Country.

And I would just urge as it seems like we have about, I don't know if it is 80 percent agreement on this stuff, but pretty broad agreement on what needs to be acted on more quickly, more promptly, and that which needs a little more scrubbing.

And so in deference to my mother, haste does make waste, but remembering the words of my father, work does expand to fill the amount of time we allocate to a job. So I would ask that we move forward on the stuff that we can move forward on, and do it as a team. And the stuff that needs a little more time, let's take a little more time, but not more time than we really need.

All right. With that having been said, I think we are going to wrap this up and you guys go have lunch maybe, and I am going to go vote. You all take care.

This hearing is adjourned. Thank you all for coming.

[Whereupon, at 12:12 p.m., the committees were adjourned.]

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